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MEDIA LITERACY IN HIGHER EDUCATION

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MYKOLO ROMERIO UNIVERSITETAS

Viktorija Mažeikienė

MEDIJŲ RAŠTINGUMAS AUKŠTAJAME MOKSLE

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CONTENTS

GLOSSARY OF KEY TERMS

Education: "A structured program of intentional learning from an institution. It is more specific than learning which can be intentional or unintentional" (Caladine, 2008, p. 307).

Higher education: "[...] any of various types of education given in postsecondary institutions of learning and usually affording, at the end of a course of study, a named degree, diploma, or certificate of higher studies." (Encyclopædia Britannica [online], 2016).

Learner: "Learner is a generic term to describe the person learning, rather than the more specific terms such as trainee and student." (Caladine, 2008, p. 307)

Literacy: "Literacy involves gaining the skills and knowledge to read, interpret, and produce certain types of texts and artifacts and to gain the intellectual tools and capacities to fully participate in one's culture and society." (Kellner & Share, 2005, p. 369)

Media: "A medium is something we use when we want to communicate with people *indirectly* rather than in person or by face-to-face contact. [...] The media do not offer a transparent window on the world. They provide channels through which representations and images of the world can be communicated *indirectly*. The media intervene: they provide us with selective versions of the world, rather than direct access to it." (Buckingham, 2003, p. 3) "The term "media" includes the whole range of modern communications media: television, the cinema, video, radio, photography, advertising, newspapers and magazines, recorded music, computer games and the internet." (Bukingham, 2003, p. 3). "[...] 'the media' has become a conventional term used to describe modern means of electronic communication" (Long & Wall, 2012, p. 4).

Media literacy: "Media literacy helps people to use media intelligently, to discriminate and evaluate media content, to critically dissect media forms, to investigate media effects and uses, and to construct alternative media" (Kellner & Share, 2005, p. 372). Media literacy "is concerned with people's ability to access and process information from any form of transmission" (Potter, 2011, p. 12). "[...] the term "digital and media literacy" is used to encompass the full range of cognitive, emotional and social competencies that includes the use of texts, tools and technologies; the skills of critical thinking and analysis; the practice of message composition and creativity; the ability to engage in reflection and ethical thinking; as well as active participation through teamwork and collaboration (Hobbs, 2010, p. 17).

Media text: "Media *texts* are the programmes, films, images, web sites (and so on) that are carried by these different forms of communication" (Buckingham, 2003, p. 3). "'Text' is one of the key pieces of technical terminology in media studies" (Long & Wall, 2012, p. 484). "Text [is] the site of the meaning value of media products." (ibid., p. 490) "[...] in interpreting the text as a 'creative' and meaningful product of the various media we aim to go beyond mere description in order to articulate fully what it has to say to us about the world" (ibid., p.30).

OPERATIONALISED TERMS

Media literacy in higher education: being media literate in higher education necessarily implies at least three components: (i) manifold **ability** to locate, analyse, assess the quality of and appropriately communicate information; (ii) **critical appraisal** of information that is much deeper, sophisticated, and reflected than in ordinary daily settings; and (iii) increasing **awareness** about the nature of media and their role in regard to knowledge construction.

Media: the term refers to both traditional unidirectional means of communication of information and the new digital interactive means of communication of information in knowledge construction. Thus, in this thesis, the term "media" refers to the *intermediary means* (i.e. *ways and environment*) of communication of information. "Technology" is a narrower term than "media" because technology is merely an available tool that can employed by its user to perform a particular operational action to convey or receive information.

Media texts are web sites (news, online libraries, databases, institutional web sites, online videos, films, TV programmes) and traditional print texts (books, images, and combinations of both, i.e. print texts can also be multimodal) that convey meaning and that are constructed and interpreted by their users.

LIST OF ABBREVIATIONS

ML media literacy
IL information literacy
MIL media and information literacy
GT grounded theory
GTM grounded theory methodology

LIST OF FIGURES

INTRODUCTION

Bearing in mind current concerns of theorists, practitioners, policy makers, and educationalists regarding media literacy (ML), it is obvious that available classifications and descriptions of ML are very general and can serve as a vantage point for further refining of the concept and its specific factors pertaining to those particular capabilities that an individual needs in a densely mediated world. Though certain documents regarding media literacy assessment criteria and strategies have been available for some years (Celot, 2010; Grizzle et al., 2013; Global Media and Literacy Assessment Framework, 2013), the complexity of the concept, the variety of approaches to it and the increasing mediatisation make it necessary to align the general criteria and strategies with the experiences of individuals as regards the use of the new information and communication media in knowledge construction. Therefore, it is necessary to refine general criteria and strategies by crystallizing those features that emerge from specific individual experiences and bottom-up accounts.

Commonly, media literacy is oriented towards educating high school students about approaches to working with information, while information literacy is oriented towards a wider audience (Grigas et al., 2016, p. 218). However, in the context of life-long learning and the rapidly changing technological and informational environment, it is also vitally important to consider the implications of the necessity to be media literate at all stages of education. What is more, the sources of knowledge construction have shifted, the boundaries between formal and informal learning are becoming blurred, and learning as a phenomenon and process itself has radically transformed with the advent of contemporary media.

Relevance of the thesis

For several years already, researchers have been pointing it out that educationalists have to re-think their attitudes towards media used in knowledge construction, as, for instance, the necessity to distinguish between teaching with media and teaching about media (Gutierrez and Tyner, 2012). The need for a comprehensive research on media literacy in national educational systems and the uptake of media substantiated by systematic research has also been highlighted (Celot, 2010, p. 15). The discourse on media literacy has long centred on classifications or attempts at defining and re-defining the concept. Consequently, some researchers urged to look at the phenomenon anew and to embark on research that would go beyond mere classification and conceptual re-defining (Poster, 2011; Landry, 2017). This urge has also been sparked by the discussions about the balance between technological determinism and the potential of human empowerment. Poster (2011, p. x-xi) points out the difference between mechanical machines that "act on materials like wood and iron" and information machines that "are closer to humans than mechanical machines and establish relations with them that are more profound". The complex and profound relationship between a human being and an information machine has been termed "technogenesis" by Hayles (2012) who has investigated how digital media are changing such human practices as writing, reading, teaching, and learning. "Having the world at one's fingertips" has resulted in such a reality when "the keyboard comes to be seen as an extension

of one's thoughts rather than an external device on which one types" (ibid., p. 2-3). Media literacy equips an individual with the competences necessary for human empowerment in search for the balance between dense mediatisation and an informed use of information and communication media. Drawing on Heidegger, Rubavičius (2014, p. 26-27) calls attention to the human ability to try to know the indefinable and points out the necessity to find a counter-balance for the presumable efficacy and universality of media theories that subject an individual to the logic and power of the information and communication networks and markets. The ubiquity and power of media have resulted in consumerist thinking that has penetrated almost all spheres of human life. The world of education and research has also undergone transformations impacted by consumerist thinking. Therefore, some of the 20th century and 21st century researchers, media theorists, and philosophers have focused on the problem of the equilibrium between the human agency and the conditions of technologization, consumerism, and mediatisation imposed on human thinking and actions (Baudrillard, 2010; McLuhan, 2003; Poster, 2011; Flusser, 2011; Manovich, 2009).

Under the conditions of densely mediated knowledge construction, it is vitally important to nurture media literacy in contemporary society. The transformations that educational institutions and the process of learning and teaching have been undergoing for some time already (because of the impacts of the new information and communication media) have made it necessary to re-think the co-existential relationship between the human being and media. Educationalists have been particularly concerned about the changes observed in the habits and preferences of learners and our perceptions of what such activities as reading and writing or such processes as knowledge construction indeed imply today. Some researchers believe that the two technologies (in the narrow sense) and information communication media (in the broad sense) that have had an indeed profound and radical impact on the educational system (in terms of teaching methodologies and strategies, knowledge construction by learners, roles of the teacher, knowledge assessment, etc.) throughout the entire history of humanity are the paper book and the internet (Cabero Almenara, 2013).

The impact of media and technologies on education has been one of the most discussed issues in contemporary educational research. The existing strategies and guidelines developed by UNESCO and the European Association for Viewers Interests (EAVI) on the international level are very important (Grizzle et al., 2013; Wilson et al., 2011; Celot, 2010) because they offer a systemic approach to the challenges that education is facing today and a changing attitude towards what it means to be literate nowadays. However, most significant changes in education are given much stronger impetus by the national educational systems. Therefore, it is particularly important for national policy-makers to take into account the implications of the challenges of mediatisation. The State Strategy of Education 2013-2022 (Valstybinė švietimo 2013-2022 metų strategija, 2013) of Lithuania does not take into account the recommendations laid out in the documents of the EAVI and UNESCO regarding media literacy. There are only sporadic references to "reflective, creative, and professional teachers" (ibid., p. 27), "fostering essential competences" (ibid.), "intercultural literacy" (p. 28), supplying schools with contemporary teaching means and information and communication technologies (p. 28), improving knowledge about con-

temporary technologies (p. 31), "a more diverse spectrum of pedagogical functions" (ibid.), "technological practical skills of knowledge application" (p. 34) that are little specified (for instance, what exactly is meant by "knowledge about contemporary technologies"). Based on what is stated further on about prioritizing technological practical skills, it is evident that the conception misses one of the essential points made by researchers today: media literacy education goes much further than merely fostering practical (operational) skills of using media (Hobbs, 2010; 2016). UNESCO in its *Global Media and Information Literacy Framework* (2013) encourages Member States to gather substantiated data "on the status and availability of competencies of MIL" before embarking on the development of national strategies to tackle situational needs and challenges pertaining to the implementation of nationally-tailored MIL policies (p. 17). What is more, as the developers of this document state, promotion and development of MIL competencies results in added value gained through adequate policies and professional standards, mobilized resources, updating training programmes and curricula and, most importantly, empowerment of citizens to be active participants in their societies (p. 23). However, McDougall et al. (2015) see MIL as too broad and too ambitious and suggest a more down-to earth approach to media education and media literacy.

Mediated experience and mediated knowledge construction are of particular importance and relevance in the educational context. Researchers have called attention to the fact that education – as teaching and development of an individual – is rarely an objective of a media creator (Pietrass, 2007, p. 10). Pietrass (ibid., p. 10-11) explicates that the world of mediated experience is tremendously important in an adult's life but this world is full of triviality, orientation towards entertainment and profit making and also it cannot be dispensed with in a complex development of the global society. Therefore, Pietrass (ibid.) states that this world must be comprehensively researched. Even more so, educationalists are very much concerned with the learning processes that are occurring in the free time when media are used, i.e. the informal learning that goes on and that is difficult to capture (Pietrass, 2007, p. 10).

Thus, the existing research into what it means to be literate today and the very concept of media literacy raise many questions. However, the most essential features for this thesis are derived from the following approaches: (i) "Media literacy helps people to use media intelligently, to discriminate and evaluate media content, to critically dissect media forms, to investigate media effects and uses, and to construct alternative media" (Kellner & Share, 2005, p. 372); (ii) media literacy "is concerned with people's ability to access and process information from any form of transmission" (Potter, 2011, p. 12); and (iii) "[...] the term "digital and media literacy" is used to encompass the full range of cognitive, emotional and social competencies that includes the use of texts, tools and technologies; the skills of critical thinking and analysis; the practice of message composition and creativity; the ability to engage in reflection and ethical thinking; as well as active participation through teamwork and collaboration (Hobbs, 2010, p. 17). Moreover, it is especially important to bring the specific pragmatic aspects that are pointed out by the users of media in educational settings into focus in order to tailor the existing theoretical concepts to the implications of mediated educational reality and knowledge construction. The relevance of this thesis to

the existing knowledge about media literacy, therefore, is its key focus on the implications of authentic accounts of those individuals who are directly concerned with the role and impact of mediated knowledge construction in higher education.

The novelty of the thesis

Media literacy has been mostly investigated in the context of education policies and recommendations, media literacy conceptions, criteria, competences of teachers and students (mostly in the secondary education and much less in higher education) (Area and Pessoa, 2012; Banny et al., 2017; Celot, 2010; García-Ruiz et al., 2014; Gutiérrez and Tyner, 2012; Grizzle, 2013; Harshman, 2017; Landry, 2017; Laurillard, 2012; Lee and So, 2014; Marta-Lazo and Grandío Pérez, 2012; McDougall et al., 2015; Nupairoj, 2016; Perry, 2012; Pegurer-Caprino and Martínez-Cerdá, 2016; Ramírez-García and González-Fernández, 2016; Stordy, 2015; Tiede and Graffe, 2014; Valdmane, 2016; Whitworth, 2013) or historical development of the concept (Hobbs, 2016). In Lithuania, important contributions have been done by contemporary authors in various fields related to media studies such as media and communication, media philosophy, media culture (Čiužaitė et al., 2012; Grigas et al., 2016; Keturakis, 2012; Klimašauskas, 2009; Michelkevičė, 2009; Michelkevičius, 2009; Prakapaitė & Paulikaitė, 2017; Obcarskaitė, 2009; Sodeika, 2009; Vidauskytė & Sodeika, 2014) and in the field of educational research (Duoblienė, 2010; Duoblienė, 2011; Vaičiūnienė et al., 2013). Importantly, closely related phenomena such as information literacy in higher education (Vaičiūnienė, 2005; Vačiūnienė, 2007; Vaičiūnienė & Gedvilienė, 2008; Vaičiūnienė & Gedvilienė, 2009; Vaičiūnienė & Gedvilienė, 2011) and issues pertinent to technology enhanced learning (Volungevičienė & Teresevičienė, 2011) have been researched by Lithuanian researchers. However, it is necessary to analyse the phenomenon of media literacy more in-depth and, especially, from the perspective of media users and their bottom-up accounts of how they employ media for their knowledge construction and learning, how they decide on the suitability and quality of media texts and how they reflect upon the role of information and communication media in real-life situations. The importance of qualitative research in media education has been pointed out by Marta-Lazo and Grandío-Pérez (2012). From this particular research perspective, little research has been conducted both globally and in Lithuania. Therefore, this thesis contributes to the existing research on contemporary understanding of literacy that necessarily takes into account media literacy because of the impact of dense mediatisation on multiple human activities and attitudes. Media literacy has also become a subject of particular concern of policy-makers in Lithuania. It has been observable in the initiatives adopted by the Education Development Centre (Ugdymo plėtotės centras, 2013) of the Ministry of Education and Science of Lithuania (the project "Media and Information Literacy" focused on the development of the awareness about media and information literacy and development of tools for teachers that can be used in the classroom) and public events such as an international conference in the Seimas of the Republic of Lithuania "Societal media literacy: a pre-condition for a secure state" ("Visuomenės medijų raštingumas – saugios valstybės sąlyga", 21 April, 2017). However, what is needed is a continued systematic and comprehensive research both in the international and national contexts. To date, dissertations in educational science have been pub-

lished about problems partly related to the topic of this thesis in Lithuania (Kasperiūnienė (2017) on the use of social networks and self-regulated learning; Valūnaitė Oleškevičienė (2016) on social media use in university studies). Abroad, doctoral theses about media literacy are written (Baylie, 2017; Gálvez de la Cuesta, 2017; Chen, 2015; Contreras-Pulido, 2014; Kelly, 2015; Mendoza-Zambrano, 2017; Warnke, 2012) but in Lithuania this thesis is the first doctoral thesis in educational science on media literacy in higher education. What is more, this thesis focuses not so much on media literacy as an outcome of media education but rather as a complex phenomenon that is undergoing continual development. Media literacy is looked at in this thesis from the bottom-up perspective, i.e. by focusing on particular aspects that are raised by students, teachers, educational technologists, and librarians who are directly involved in learning and education-related processes in higher education and who have to apply the skills (that are pointed out in academic literature as relevant to media literacy) in their daily activities in higher education. What is more, higher education itself deserves much more attention that it is given in academic literature in comparison to the amount of research focusing on secondary or primary education (Laurillard, 2002).

The scientific problem, the object and the research questions of the thesis

Due to the impacts of dense mediatisation of knowledge construction, learning and teaching, human behaviour patterns, and ways of knowledge construction have radically changed. Therefore, media literacy has to be sought in order to acquire appropriate competences (knowledge, skills, education, values, and attitudes) for successful self-fulfilment in contemporary society that is often referred to as knowledge society, information society, networked society, media society, etc. Media literacy allows one to search for, select, sort and critically evaluate quality of multimodal information and avoid being overwhelmed, lost, or misinformed amidst uncontrollable information flows under the conditions of information overabundance, information overload or what Whitworth (2009) refers to as "information obesity". A media literate person is also informed about the media he or she employs in knowledge construction above simple operational level. Moreover, it is essential to understand the role of media in a democratic society; therefore, critical thinking skills are very closely related to media literacy skills. Knowledge about the necessity and criteria of critical evaluation of information and students' self-reported ways of using information are inter-related; however, the actual behaviour with texts, used for studies is different, i.e. we are faced here with the **problem** of contradiction between presumed knowing (alongside self-reported use) and students' actual behaviour with multi-modal texts and information as it has been reported by Hogan and Varnhagen (2012). This problem impacts study process and student achievement in higher education. Networked environment, the time students spend online, the new learning preferences of the generation that was born when the internet era was already begun, networking of studies worldwide, the impact of social networks on professional and personal spheres – all these factors entail a number of issues for educationalists, such as changes observed in human thinking and reasoning due to, for example, reading on screen (of fragmented text, hypertext, multimodal formats, etc.) and on paper, changes in students' ability to retain attention, information process-

ing skills, memory capabilities, difficulties in assessing quality of information when faced with information overload, etc. Thus, what is necessary is research grounded in empirical data with a specific focus on the contradiction between knowing about the necessity of the critical appraisal of multimodal information and students' actual behaviour in educational context. Media literacy is usually investigated in the context of secondary education, but it is not that common to research the phenomenon in the context of higher education. Therefore, media literacy in higher education has been chosen as **the object of this thesis**. The research in this thesis has been guided by the **questions**: (i) *how is media literacy perceived by students, teachers, educational technologists, and librarians in higher education?* (ii) *How do they cope with the challenges of the densely mediated environment of knowledge construction?* (iii) *What particular skills are needed in coping with the challenges of mediated learning, education, and knowledge construction?* And (iv) *Why does the concept of literacy itself needs scientifically-based revisions?*

The aim of the research is to develop a grounded theory of media literacy in higher education in order to account for university students' actual use of multimodal media texts for learning and the related challenges imposed by heavily mediated environment of knowledge construction.

The objectives of the research:

1. To overview research literature pertaining to media literacy in education and knowledge construction in order to reveal the diversity of approaches and the complexity of the concept;
2. To identify the research participants' actual behaviour with and experience of multimodal media texts and information, their decision making regarding quality information selection, ways of coping with information overabundance and digitally mediated knowledge construction;
3. To develop a grounded theory revealing students' media literacy skills necessary for comprehension and analysis of media texts in higher education.

Research methodology

The research methodology applied in this research is the ***constructivist grounded theory*** (Charmaz, 2014). The choice of ***qualitative*** methodology in this thesis stems from the belief that the defined problem needs an in-depth research in order to understand better and account more precisely how the research participants' attitudes towards the role of media in knowledge construction shape their approaches to coping with their assignments under the conditions of densely mediated environment and information overload. In addition, the ***constructivist*** version is particularly appropriate for studying phenomena of contemporary society: information and communication media employed in daily activities have a very strong impact on learners' knowledge construction, habits, thinking and actions meanwhile media users commonly do not analyse their impact and role deeper and merely use them on a basic operational level. But above all, the constructivist version is based on the distinctive premise that both the researcher and research participants subjectively interpret the reality and co-construct their understandings about a researched phenomenon

through their interaction. Data has been collected by conducting ***in-depth, unstructured interviews***. For this thesis, 20 interviews have been conducted and have been instantaneously analysed by applying ***the constant comparative method***. Research participants have been chosen on the basis of ***theoretical sampling*** that implies purposive seeking of those participants who can shed light on the researched phenomenon and its emergent categories, dimensions and their properties. Data have undergone several coding stages – ***initial coding, focused coding, axial coding***, and ***theoretical coding*** – starting with a very close inspection in the initial stage and extending into a theoretical, increasingly more abstract and conceptual processing ultimately leading to the construction of the grounded theory.

Limitations of the research

1. The research limitations arise from the chosen approach to the concept of media literacy in which media literacy is seen as broader in scope than information literacy. Though information literacy is not directly the object of this research, information literacy is nevertheless very closely tied to media literacy because information search is an important issue in this research. A broad perspective always hinders crystallisation of definitions. Therefore, occasionally, the concept of media is used alongside the concept of technologies. Though these are two distinct objects, they cannot be strictly separated because technologies are tools that are inevitably employed in using media. More often than not, the two objects intertwine. **2.** This research is not aimed at classifying, defining or refining the existing lists of particular competences associated with media literacy but rather it is focused on what it means to be media literate from the practical perspectives of media users in higher education. A refined list of media literacy-related competences in higher education could be a research object of another much needed research onto media literacy. **3.** The delimitation of the research object to higher education level only is also a certain limitation to the very scope of the concept of media literacy. **4.** Media literacy raises many problematic questions that have arisen but have not been answered by this research, for instance, who should assume major responsibility for the huge impact of media on knowledge construction (media creators or users or both). This could also be an important research object of another or continued research.

Structure of the thesis

The thesis consists of an introduction, four body parts and discussion, conclusions, bibliography list, and appendices.

In Chapter 1, an initial literature review is done. This review serves as a vantage point that locates the object of this research in the existing conceptual framework. It is very general and does not aim at specifying any particular aspects of the researched object. In line with the premises of grounded theory methodology, comprehensive literature review is delayed until research data has been gathered, analysed and described. Within the constructivist vein, only a broad presentation of key phenomena and general concepts pertinent to research may be introduced in an initial literature review, as it is done in this thesis.

In Chapter 2, the constructivist grounded theory methodology that has been used in this research is introduced, its basic premises pointed out and its suitability for this particular research explained. In this chapter, data gathering methods, data analysis tools, and data

coding stages are described, and information regarding research participants is provided. Besides, this chapter includes sections on the researcher's self-reflection, research ethics principles and research quality criteria.

In Chapter 3, the findings of the empirical research are described. The findings focus on two axial categories that have emerged as a result of initial, focused and, subsequently, axial coding procedures. First, the axial category called MORPHING is described in detail; its pertinent dimensions (symbiosis, merging entertainment and learning, and granularity) are explicated through their specific properties. Second, the axial category termed ANCHORING is presented alongside its dimensions (re-thinking educational institution, critical appraisal of information, and coping) and their relevant properties.

In Chapter 4, the constructivist grounded theory developed in this research is explicated. This theory is called *The Sandglass*: the metaphoric representation of the media literacy as a complicated, multi-layered and ever-evolving phenomenon in the image of the sandglass is believed to reflect very well the relationships between all the conceptual categories that have emerged as pertinent to the researched processes and their elements.

In Chapter 5, the structural and conceptual elements of the theory of *The Sandglass* are analysed in the background of the relevant theoretical conceptions found in the scientific literature and the constructed grounded theory is discussed in the context of the existing research pertinent to the research object of this thesis.

The dissertation ends with Conclusions, list of References and Appendices.

Approbation of the research results

Presentations in conferences:
1. International scientific conference "SOCIAL INNOVATIONS: THEORETICAL AND PRACTICAL INSIGHTS (SOCIN 2014)", MYKOLAS ROMERIS UNIVERSITY", 23-24 October, 2014, Vilnius. Presentation "Conceptualising media literacy in the process of reading digital media texts".
2. International conference "OPEN PROFESSIONAL COOPERATION", Vytautas Magnus University and Lithuanian Association of Distance and e-Learning, 5 November 2015, Kaunas. Presentation "The role of media literacy in higher education: the dynamics of the concept and the actual situation in Lithuania and Spain".
3. International scientific conference "SOCIAL INNOVATIONS: THEORETICAL AND PRACTICAL INSIGHTS (SOCIN' 2016)", Mykolas Romeris University, 29 September, 2016, Vilnius. Presentation "Media and information literacy in university studies: conceptualising academic research in the Googled world".
4. International scientific interdisciplinary conference "DISCOURSE, TECHNOLOGY AND TRANSLATION", Mykolas Romeris University, 12-13 October, 2017, Vilnius. Presentation "Discourse analysis tools and critical appraisal of information in teaching translation".
5. The 1st International conference of doctoral students in Educational Sciences, Klaipėda University, 14 October, 2017. Presentation "Media Literacy in Higher Education: Constructing Knowledge in a Densely Mediated World".

Publications on the dissertation topic:

1. Mažeikienė V., Vaičiūnienė V., Valūnaitė Oleškevičienė G. (2013). *Social Media in Adult Education* (Edited Book), Mykolas Romeris University, Vilnius.
2. Vaičiūnienė, V., Mažeikienė, V. (2014). Kūrybiškumas, įtinklintas mokymas(is) ir visapusiškesnių pažintinių gebėjimų ugdymas universitetinėse studijose. *Socialinių mokslų studijos: mokslo darbai/Societal Studies: research papers, 6*(1), 21-33.
3. Mažeikienė, V. (2015). Critical awareness in the realm of abundance. *European lifelong learning magazine (ELM) (2015(1)*, 1. Available at http://www.elmmaga-zine.eu/articles/critical-awareness-in-the-realm-of-abundance/
4. Vaičiūnienė, V.; Mažeikienė, V. (2016). Media literacy and information literacy: conceptual convergence into a composite notion of MIL. *Socialinių mokslų studijos: mokslo darbai/Societal studies:research papers, 8*(1), 78-94. Available at http://dx.doi.org/10.13165/SMS 16-8-1-5

Methodology seminars:

Methodology seminars for doctoral students in social sciences (13-14 February 2015, University of Latvija, Riga).

Study visits:

1. June-July 2015 Faculty of Education (University of Cordoba)
2. June -July 2016 Faculty of Education (University of Cordoba)

Personal consultations

Prof. Antonia Ramírez García (Faculty of Education, University of Cordoba) and Prof. Pillar Guttiérez Arenas (Faculty of Education, University of Cordoba) 2015-2016

CHAPTER 1. MEDIA LITERACY: THE COMPLEXITY AND SCOPE OF THE CONCEPT

Contemporary media and digital technologies – Web 2.0 in particular – have substantially changed the way we communicate and learn. Therefore, it is only natural that scholars, educationalists, policy-makers, educational technologists and others have been focusing their attention on what it means to be literate in a densely mediated, networking and technologized society of nowadays (Stordy, 2015). Back in 1983, Williams noted that the origins of the term *literacy* lie at the end of the 19th century (cited in Stordy, 2015). Gurak (2001) notes that, in the beginning, the concept implied merely the ability to decode and encode a text (cited in Stordy, 2015). Recently, the scope of the conception has been continuously expanding and the concept getting more complex due to the technological development of society and increasingly more mediated exposure to reality and knowledge construction. As a result, numerous researchers have started constructing their own theories and terminology to label their own perceptions of what it means to be literate nowadays.

Thus, in academic literature, we come across such terms as information literacy, digital literacy/literacies, new literacies, media literacy, critical literacy/literacies, new media literacy, technology literacy, visual literacy, ICT literacy, multimodal literacy/literacies, multiple literacies, metaliteracies, online literacy, transliteracy, web-based literacy, political literacy, financial literacy, health literacy, etc. (Stordy, 2015; Landry, 2017). Recently, considerable discussions have been focusing on the umbrella concept of *media and information literacy* proposed in UNESCO documents (Grizzle, 2013; Wilson et al., 2011) explicating the concept of literacy as an essentially composite notion.

Media literacy is a multi-faceted phenomenon. Therefore, it is only natural that media literacy research implies interdisciplinary approach. This stems from the poly-semantic nature of the very concept *media* and from the convergence of concerns from diverse research fields that revolve around media and their role and impact on human life (media studies, communication studies, education science, sociology, philosophy, linguistics, arts, information sciences, public relations, etc.). Oxforddictionaries.com distinguishes between the use of the singular form "medium" and the plural "media" and gives such as definitions for the singular form "media" as "An agency or means of doing something"; "A means by which something is communicated or expressed", "A particular form of storage material for computer files, such as magnetic tape or discs", or "The material or form used by an artist, composer, or writer". For the plural "media", Oxfordictionarie.com, provide the following definition: "(*treated as singular or plural*) The main means of mass communication (broadcasting, publishing, and the Internet) regarded collectively". BusinessDictionary.com provides are more detailed definition of the term "media": "1. Communication channels through which news, entertainment, education, data, or promotional messages are disseminated. Media includes every broadcasting and narrowcasting medium such as newspapers, magazines, TV, radio, billboards, direct mail, telephone, fax, and internet. *Media* is the plural of *medium* and can take a plural or singular verb, depending on the sense intended. 2. Data storage material divided into three broad categories according to the recording method: (1) Magnetic, such as diskettes, disks, tapes, (2) Optical, such as micro-

fiche, and (3) Magneto-Optical, such as CDs and DVDs." Buckingham (2003), a scholar in the field of media education, notes that "[...] the term 'media' includes the whole range of modern communications media: television, the cinema, video, radio, photography, advertising, newspapers and magazines, recorded music, computer games and the internet" (p. 3). Books, according to Buckingham, can also "be seen as 'media' since they too provide us with mediated versions or representations of the world" (ibid.). Also, the media are "the major contemporary means of cultural expression and communication: to become an active participant in public life necessarily involves making use of the modern media" (ibid., p. 7).

In its most narrow meaning, the term "media" is employed in communication studies (in what has previously been termed "mass communication" but the attribute "mass' has lost its significance since the emergence of web 2.0 has turned all media into mass media). In the narrowest sense, media are defined as "sources of credible information (information undergoing editing processes" (Wilson et al., 2012, p. 61) and thus media (news providers) are distinguished from "non-media providers such as libraries, archives, museums, Internet information providers, other information organizations, and citizens producing their own content" (ibid.).

Communication studies are essentially interdisciplinary and tightly related to semiotic studies (for instance, by placing focus on the study of signs and codes) or research into social relations and social interaction through messages (Fiske, 1998, p. 15-16). As Peters (2004, p. 289) notes, if one wants to investigate communication ideas in-depth, he or she should study comprehensively the 20th century literature, philosophy, art, dramaturgy, cinematography, politics, linguistics, social sciences, engineering, and natural sciences. In the 21st century, communication is related to modern information and communication media, impacts of digitisation, mediatisation, and what is referred to as "telepresence" (Bracken and Skalsi, 2010). The key implication in Peters' (2004; 2014) thinking is the importance of knowing the nature of communication media because it leads to a better knowing of oneself. This viewpoint is in line with McLuhan's (2003) viewpoint of the role and nature of media as extensions of man.

From classical sociological perspectives, Goffman (1956) looks at human interaction in terms of how individuals seek to present themselves to others and how others come to perceive him or her based on certain evident signs and their previous knowledge about the individual or the experience of previous encounters. What Goffman refers to as "interactional modus vivendi" (1956, p. 4) can be easily transferred to the communication modes (via social networks, for example) of learners in their search, selection, and appraisal of information: "Together the participants contribute to a single overall definition of the situation which involves not so much a real agreement as to what exists but rather a real agreement as to whose states concerning what issues will be temporarily honoured" (ibid., p. 4).

Studying media is related to studying how people communicate and how they build their knowledge about the world and themselves. Thus, studying media inevitably implies the necessity of a multidisciplinary focus. The need for a multidisciplinary approach evidences that there are similar methods that we know and that lead to problem solutions, and these methods are visible both in the humanities and social sciences (L. Tamošiūnienė,

personal communication, 30 June, 2014). From educational perspectives, solutions to complex problems also come from a multidisciplinary approach: "Complex issues that we are facing today can only be solved by a broad vision and multidisciplinary approach to the arising problems" (Global Media and Information Literacy Assessment Framework, p. 27).

The very term "literacy" is sometimes defined as communication: "Literacy can be roughly defined as communication through visually decoded inscriptions rather than through auditory and gestural channels. Literacy as a human activity has lurked in the background of both anthropological and linguistic research through its history [...]" (Besnier, 2001, p. 136). Moreover, the need for multidisciplinary approach is also reflected in the changing conceptions of what it means to be *literate* today: literacy has long ceased to be seen as merely the ability to read and write. Overall, literacy is seen today as an evolving concept (Global Media and Information Literacy Assessment Framework, 2013) and it is understood as multiple literacies on a continuum: "Individuals are variously literate, demonstrating differing levels and uses of literacy competencies according to their environments, needs and available resources" (ibid., p. 25). A perspective of literacy that is most relevant in the context of this research is that of Freire (2000, p. 231) who believes that literacy is meaningful only as a consequence of human ability to reflect upon the world and people in the world, about human ability to re-construct the world; in Freire's view (ibid.) literacy is real when it stops being just an external thing and becomes an ingrained part of an individual, a criterion that has been defined by the individual. In Freire's vision (ibid.), only the literacy curriculum which enables people to understand the power of words and their true meanings makes sense. This human ability is the factor that can contribute to the re-construction of the world (p. 231).

Today, any contemporary conception of literacy takes into account the impact and the role of information and communication media because knowledge construction is hardly imaginable without employment of media in the teaching and learning processes. Education – just like other spheres of human activity – has become heavily technologized and knowledge construction technologically mediated. Therefore, it has become necessary to re-define literacy and to take into account the implications of media literacy because "Media literacy helps people to use media intelligently, to discriminate and evaluate media content, to critically dissect media forms, to investigate media effects and uses, and to construct alternative media" (Kellner & Share 2005, 372). Buckingham (2003) sees media literacy as an outcome of the media education process. Media literacy is an indispensable competence of a literate individual today.

In their search for a definition of literacy encompassing necessary competencies for today's reality, researchers and policy-makers have come up with composite notions such as media and information literacy (Grizzle et al., 2013; Whitworth, 2013). Whitworth (2013) refers to it as a *holistic* concept and explicates what he sees as skills of a media literate individual (as the one who can *validate* information against *generic*, *personal* and *context-based* criteria:

> A holistic Media and Information Literacy can be defined as the knowledge, attitudes, skills, and practices required to access, analyse, evaluate, use, create, and communicate information and knowledge, in creative, legal and ethi-

cal ways. In short, MIL is the sum of educational processes through which we learn about the structures and bases of value within each of the three domains (cf. Whitworth 2009, Ch. 2). Media and information literate individuals can validate found and produced information against a range of generic, personal and context-based criteria. If M&IL is taught in ways that address only one or even two of the domains, the related pathologies of the 'missing' domains will come into play in some form, and the quality of found or produced information will be diminished. (p. 47)

The three domains referred to by Whitworth (2013) are the *objective* domain (learners are instructed about the external criteria of "making judgements about information", for example in the form of guidelines and rules, learners acquire foundational skills through generic teaching) (p. 42), the *subjective* domain (personal judgments over information, individual learning (which is seen as essential, but necessarily requiring self-awareness and reflection on one's cognition, cognitive bias and resilience to groupthink) (pp. 43-45), and the *intersubjective* domain (the intermediary domain between the objective and the subjective domains that focuses on the level of organisations, communities and networks, and that is socially constructed; this is the domain where transformations through communication and learning occur and that is related to media literacy, in particular, critical media literacy (pp. 45-46). Critical media literacy and its implications for media education have been explicated by Kellner and Share (2007): "Critical media literacy is an educational response that expands the notion of literacy to include different forms of mass communication, popular culture, and new technologies. It deepens the potential of literacy education to critically analyse relationships between media and audiences, information, and power." (p. 60).

Potter (2011) adopts a broad perspective on media literacy and sees information access and processing as an in-grained element of media literacy: ML "is concerned with people's ability to access and process information from any form of transmission" (p. 12). This is rather close to the early definition of literacy (dating back to the end of the 19th century) – as the ability to encode and decode a text that has been referred to above – only that the latter definition introduces the notion of "transmission" which is one of the key concepts in electronic age. Most importantly, Potter's (ibid.) approach is a balanced approach: admitting the potential of negative media effects on individuals and societies, he builds on the premise that media can also bring about positive effects. More specifically, as regards literacy, Potter (ibid.) admits that "literacy is about being skilled at assessing the meaning in any kind of messages, organizing that meaning so that it is useful, and then constructing messages to convey that meaning to others." (pp. 12-13). What is obvious from this perspective is that a message (a media text) in any form or from any type of medium, communication of information, processing and appraisal of information and self-expression are closely inter-related processes. "The three building blocks of media literacy" of Potter (ibid., p. 13) – *personal locus* ("goals and drives" (p. 13)), *knowledge structures* ("sets of organized information in a person's memory" (ibid.)), and *skills* ("tools that people develop through practice" (p. 15) – are inter-linked with the UNESCO definition of media and information

literacy as "[...] the essential competencies (knowledge, skills and attitude) that allow citizens to engage with media and other information providers effectively and develop critical thinking and life-long learning skills for socializing and becoming active citizens" (Grizzle et al., 2013, p. 191). UNESCO's focal point in their approach (Grizzle, 2013, Wilson et al., 2012; "Global Media and Information Literacy Assessment Framework", 2013) is the empowerment of an individual. To quote Stordy (2015), "UNESCO perceives that new social media platforms have created a virtual second world which demands new competencies and understandings to effectively exploit opportunities and minimise the associated risks." (p. 465). Indeed, one important development regarding the nature of today's Web 2.0-based media is that they are acquiring certain features of social media (which are defined by Kaplan and Haenlein (2012) as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content" in terms of user-involvement, interactivity, information (over-)sharing, appraisal of information quality, cross-checking facts, overwhelming number of users that can be reached online and other important issues. The similarities and differences between media literacy and information literacy have been studied in-depth by Lee and So (2014) who note that "The development of digital technology is a key factor for combining media literacy and information literacy." (p. 138)

Hobbs (2010; 2016), one of the most prominent authors on media literacy education, uses the composite concept of *digital and media literacy* in order to bring to the fore digitization as an inherent aspect in discourse about literacy, education, and other spheres of life. According to Hobbs (2010), digital literacy is "the ability to use computers, social media, and the Internet" (p. 17). Computers, social media, and the internet are becoming inherently related with all the ways we access information and construct our knowledge about the world – TV channels are becoming available for watching on mobile devices, newspapers are relocating into the digital world in order to save costs of print and distribution and access more readers, short videos are replacing lengthy analytical articles or TV programmes, telecommunication is converging with mobile technologies. Consequently, researchers are unsure about the fate of paper book as regards "serious reading".[1] However, as it comes to mass communication media (such as TV, radio, newspapers and magazines, the Internet), "serious reading" is replaced by quick reading modes due to the exponentially growing amounts of information. Therefore, the digital aspect alone, though being an inherent element, does not entail much as regards a broader perspective defining what it means to be literate today.

Hobbs (2010) states that her composite concept of digital and media literacy in her approach

> [...] is used to encompass the full range of cognitive, emotional and social competencies that includes the use of texts, tools and technologies; the skills of critical thinking and analysis; the practice of message composition and crea-

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1   Naomi Baron in her 2016 book *Words on Screen: The Fate of Reading in a Digital World* (published in New York by Oxford University Press) describes her research of 300 college students from around the world of which 92 percent of the US students, 77 percent of Japanese students, and 95 percent of German students prefer hardcopy of a long schoolwork text (p. 85)

tivity; the ability to engage in reflection and ethical thinking; as well as active participation through teamwork and collaboration. When people have digital and media literacy competencies, they recognize personal, corporate and political agendas and are empowered to speak out on behalf of the missing voices and omitted perspectives in our communities. By identifying and attempting to solve problems, people use their powerful voices and their rights under the law to improve the world around them. (p. 17)

The highlight on the digital, though, is very important in terms of the wider societal problems such as *the digital divide*: not being able to use a computer and the Internet excludes people from adequate participation in society, quality education, access to various sources of information in the globalized and networked world.

Traditionally, literacy was regarded as a cognitive ability and as a social practice (Street, 1984). Literacy as a merely cognitive ability (to read and write) would not and could not reflect the complexity of what it means to be literate nowadays. Therefore, for some literacy researchers, digital media and social practices are fundamental. Livingstone (2008), for instance, brings to the fore the internet in her conception of literacy. Understanding the internet as a technological medium is essential. When back in 1964 Marshal McLuhan stated that media is the message, he sought to point out the essential role of any media, not the content, to shape and re-shape our worldview. The internet with its reach and its ability to affect all spheres of human life should be studied as a medium in itself. Therefore, understanding audience reception and media effects are an integral part of understanding how media construct our worldview and knowledge. Livingstone in her more recent publications (2011, 2013) refers to ML as encompassing the skills subsumed by the internet literacy.

The European Commission (EC) in its call for proposals in the field of ML defines it as "an umbrella expression that includes all technical, cognitive, social, civic and creative capacities that allow a citizen to access the media, to have a critical understanding of the media and to interact with it".[2] "Media" is understood broadly here as "including all kind of media (television, radio, press) and through all kind of channels (traditional, internet, social media).[3] Roberto Viola, head of the Directorate-General for Communications, Networks, Content and Technology of the EC, in his opening speech in *Media and Learning Conference* that took place in Brussels on 10 March, 2016, paid attention to the changing media landscape and approaches to media literacy. A rise in interest in ML, according to Viola (2016), has been sparked by 3 inter-related reasons:

> First, media literacy is intrinsic to a healthy democracy. Second, media literacy is a necessary response to a changing and increasingly complex media landscape. Third, media literacy is an element in key discussions in recent months in the fight against radicalisation and respect and promotion of fundamental rights.

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2   Call for proposals – Pilot Project „Media literacy for all" p. 1. https://ec.europa.eu/digital-single-market/en/news/pilot-project-media-literacy-all [accessed 09.10.2016].

3   *Ibid.*

Generally speaking, the EC definition regards ML as fundamental in tackling key societal issues, promoting fundamental rights, combating hate speech online, and enabling citizens to spot propaganda and to become critical users of information.[4] Therefore, critical thinking is seen as a pillar in educating responsible and aware individuals. The same document defines critical thinking as including, "[...] among other skills, the ability to distinguish information from propaganda, to deconstruct media communication and to interact with social media in a mindful way".[5]

Bearing in mind the increasingly more extensive academic research, institutional publications, increased interest of educational policy-makers and all those concerned with education, both theorists and practitioners alike, it is obvious that media literacy has to be considered in relation to particular national contexts and national education systems acknowledging the necessity to integrate media education into teaching curricula. The complexity of the concept and its widening scope mean that many factors come into play in the field. Such being the case, it is necessary to approach the phenomenon and the related processes from both a conceptual perspective (as it is evident in the research and documents discussed in this chapter) and accounts of personal experiences (as it is attempted to do in this thesis).

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4   Call for proposals – Pilot Project „Media literacy for all" p. 2.
5   *Ibid*. p. 2

CHAPTER 2. METHODOLOGY

2.1. Epistemic premises

According to Bryman (2008), "Methods of social research are closely tied to different visions of how social reality should be studied." (p. 4). The choice of qualitative research strategy for this thesis stems from the very object of this research, i.e. media literacy in higher education, and the state-of-the-art in the pertinent research field: there are numerous classifications of competences available as well as ample attempts at defining the complex phenomenon and its characteristics. However, the choice of the qualitative research strategy is grounded in the author's conviction that such complex phenomena (though they can be defined and some dimensions can be measured) need an in-depth approach that is insufficient without a closer look at subjective meanings and interpretations of individuals in their particular contexts and from the perspective of their particular experiences. Moreover, the choice of the qualitative paradigm is also rooted in the author's belief that an individual's knowledge of the world is mostly socially constructed through social interaction with other individuals as well as virtual interactions in a densely mediated and technologized environment. As Charmaz (2014) points out, "[...] the constructivist approach treats research as a construction but acknowledges that it occurs under specific conditions – of which we may not be aware and which may not be of our choosing" (p. 13).

2.2. Grounded theory methodology

Grounded theory methodology (GTM) has undergone an impressive historical development as a research strategy within social sciences. Having originated in the seminal book of Glaser and Strauss *The Discovery of Grounded Theory* (1967), grounded theory methodology (GTM) has since then ramified into several versions. However, these versions share key principles that unify them under the over-arching name of GTM that are rooted in this fundamental classical publication. Though there have been ardent debates about what a GT is, the ramifications of GT that have been developed since 1967 are co-existing as valuable options for researchers to employ depending on their ontological and epistemological stance and depending on recent developments of the contemporary society. As Morse (2009) states,

> Grounded theory, particularly when used with a symbolic interactionist lens, enables not only documentation of change within social groups, but understanding of the core processes central to that change. Grounded theory enables the identification and description of phenomena, their main attributes, and the core, social or social psychological processes, as well as their interactions in the trajectory of change. (p. 13)

GTM is often referred to as a group of related though different versions of GT. Presumably, the original principles put forth in *The Discovery of Grounded Theory* can be regarded as prototypical, forming the base of all existing GTM schools that, in the course of devel-

opment, have acquired their own specific features but have retained the same core procedures. Corbin (2009) thus suggests viewing the co-existence of varying approaches within the entire GTM:

> Perhaps it would be better to think of grounded theory as a compendium of different methods that have as their purpose the construction of theory from data, with each version of grounded theory method having its own philosophical foundation and approach to data gathering and analysis, while sharing some common procedures. (p. 41)

Charmaz (2009) also sees GT as an umbrella term: "I see grounded theory as an umbrella term covering several different variants, emphases, and directions – and ways to think about data." (p. 128). In the same vein, Babchuk (2010) regards the existing versions of GT "an extended family of methods". Charmaz (2014) refers to them as "a constellation of methods" (p. 14).

Currently, methodologists distinguish five systemic versions within GTM all of which have their origins in *The Discovery of Grounded Theory* (1967): classical, structural, constructivist, postmodernist situational analysis, and dimensional analysis (Morse, 2009; Charmaz, 2014; Žydžiūnaitė & Sabaliauskas, 2016). The *classical* version of GT is regarded by scholars nowadays to be an objectivist positivist direction in GTM that has been developed by Glaser (1978; 1992; 1998; 2001). This version emphasizes emergent discovery, abstract conceptualisation, researcher assuming the role of objective neutral observer, strict methodological suppression of any preconceptions while theory is undergoing emergence, and technical objectivist research jargon. The grounded theory version developed by Strauss (1987), Strauss and Corbin (1990; 1998), and Corbin and Strauss (2008) is a *structural* post-positive approach within GTM that does revolve around the emergence of theory but also prescribes structural techniques such as the analytic procedure leading to the development of a conditional matrix that structurally explicates complex relationships between conditions and consequences of a studied phenomenon. The *constructivist* GT developed by Charmaz (2006; 2014; 2015; 2016) emphasizes the co-construction of theory by both a researcher and research participants and the emergence of theory through close interaction in particular contexts. The fourth version – the *situational analysis* (Clarke, 2005; Clarke, 2009) – is a postmodernist version where attention shifts from a social process to "social arenas" that are characterized by multiple discourses within social worlds of collective actors. The fifth version – the *dimensional analysis* (Bowers & Schatzman, 2009; Schatzman, 1991) – emphasizes an early identification of dimensions and properties of a studied phenomenon; it does not see comparative analysis as central and does not require searching for a basic social process because social life is seen as too complex to be accounted for by a single social process (Bowers & Schatzman, 2009, p. 103). However, despite of the differences existing among GT versions, there are key principles and procedures that are retained throughout all versions of GT such as simultaneous data collection and analysis using the constant comparison method, memo writing, and theoretical sampling.

These three versions – classical, structural and constructivist – are most often employed in educational research. The heavily technologized world of today renders research into

educational reality (much of which has been transferred to the virtual realm) extremely difficult. Therefore, researchers seek new methods of penetrating into the phenomena of contemporary education and learning/ teaching processes. Grounded theory methodology offers very flexible tools to investigate complex phenomena such as technology enhanced learning (Alonso-Díaz & Yuste-Tosina, 2015). What is more, the foundational grounded theory premises have been found useful by some educational researchers who adopt grounded theory as an enriching constituent part of other methodologies (for example, educational action research) with which they combine GTM in the investigations of multifaceted educational reality of nowadays (Kapenieks, 2016) or investigate compatibility of GTM and action research strategy (Žydžiūnaitė, 2016). Nguyen (2015) raises one more relevant issue for contemporary education, i.e. the role of the library such professionals as librarians, by pointing out the importance of the library assuming participatory role in higher education. GTM is becoming employed for research in various educational fields: for example, Derbyshire et al. (2015) conducted a GT study of inter-professional learning in undergraduate programs of health professionals' education and the university educators' perceptions of their role adequacy. Compton and Barrett (2016) investigated the application of GT in art and design education.

2.3. Constructivist grounded theory

The choice of qualitative methodology in this thesis stems from the belief that the defined problem needs an in-depth research in order to understand better and account more precisely how the research participants' attitudes towards the role of media in knowledge construction shape their approaches to coping with their assignments under the conditions of densely mediated environment and information overload. For this dissertation, a constructivist grounded theory version developed by K. Charmaz (2014) has been chosen since this version is particularly appropriate for studying phenomena of contemporary society: media employed in daily activities have a very strong impact on knowledge construction, habits, thinking and actions of individuals; meanwhile, the users of these media are not inclined to analyse their impact deeper and merely use them on an operational level. In addition, the version is based on the distinctive premise that both the researcher and research participants subjectively interpret the reality and co-construct their understandings about a researched phenomenon through their interaction. In Charmaz's approach to constructivism in GT, relativity, subjectivity, and researcher's engagement in data construction are essential (Charmaz, 2000; Charmaz, 2014, p. 13). Charmaz (2014) thus recounts her process of crystallization of what "constructivist" in constructivist GT implies:

> During the 1980s and 1990s, I grew dissatisfied with social constructionist approaches to research in my discipline. Sociologists who conducted social constructionist research often produced impressive analyses of the constructions of the worlds they studied. But they treated their analyses as accurate renderings of these worlds rather than as constructions of them. Nor did they take into account *their* processes of construction of the research and the structural and situational encroachments upon it. (p. 14)

According to Charmaz (2014), both the researcher and research participants *co-construct* meaning and a researcher's position has to be seen "as an inherent part of the research reality":

> Researchers can use grounded theory strategies without endorsing mid-century assumptions of an objective external reality, a passive, neutral observer, or a detached, narrow empiricism. If, instead, we start with the assumption that social reality is multiple, processual, and constructed, then we must take the researcher's position, privileges, perspective, and interaction into account as an inherent part of the research reality. It, too, is a construction."(p. 13)

Another important issue in GTM is that of the much-debated *time of literature review*. The major division in regard of the time of literature review occurs between the objectivist and the interpretative approaches. The objectivist approach requires a strict suppression of all influences of prior readings of other authors and theories in a researched field while the interpretative position is built on the premise that such suppression is impossible and even illogical. Many arguments for the impossibility of pure induction have been explicated by Chalmers (2005, p. 70). In a similar vein, Thornberg (2012) objects to delaying literature review in GT and believes that a GT has to be an "informed grounded theory". Lempert (2007) invites not to "reinvent the wheel" and use literature (p. 251):

> In order to participate in the current theoretical conversation, I need to understand it. I must recognize that what may seem like a totally new idea to me (an innovative breakthrough in my research) may simply be a reflection of my ignorance of the present conversation. A literature review provides me with the current parameters of the conversation that I hope to enter. Utilizing comparisons from the literature alerts me to gaps in theorizing, as well as the ways that my data tells a different, or more nuanced, story (for an example, see Lempert 1995). It does not, however, define my research. (p. 254)

In constructivist GT, readings on theory and prior research are initially carried out in order to set the background of information that *sensitizes* a researcher towards the studied phenomenon. But, as Charmaz (2006; 2014) highlights, this is a process based on interpretative logic and some guidelines (but not a specific plan that is prepared in advance to be strictly and unwittingly followed afterwards). Once the research is finished and a grounded theory constructed, literature is discussed to a greater extent and in more detail in the discussion part in order to compare the findings with the existing research (Creswell, 2009, p. 75). Importantly, the literature review done before embarking on data collection and analysis for a research is very different from the literature review done once the categories of one's GT are constructed: the subsequent literature review "speaks to" the constructed categories, it is much narrower and much more focused, it reflects one's analytical categories and "cuts across areas" (Charmaz, 2015, 6:48). As Charmaz (2014) suggests, "[...] use it [the theoretical framework] to provide an anchor for your reader and to demonstrate how your grounded theory *refines*, *extends*, *challenges* or *supersedes* extant concepts" (p. 310, highlights by the author).

Constructivist grounded theory in educational research. Constructivist GT as a valuable methodology is increasingly applied in contemporary educational research to investigate complex societal issues. Keane (2015), for instance, applied the constructivist GT to investigate widening participation in Irish higher education. Mikhaylov (2016) employed constructivist GT to study curiosity and its role in cross-cultural knowledge creation. Using constructivist GT in combination with the principles of action learning, Rand (2015) investigated dimensions of knowing and perceptions of polarity between knowledge and skill. Bondy et al. (2015) employed constructivist GT to investigate features of online pedagogy and defined the kinds of content and assignments that may promote critical social justice literacy. In their constructivist GT study, Sharma et al. (2016) investigated the significance of digital literacy programmes in a knowledge society in relation to sustainable development within the public services in the fields of education, healthcare and e-government. An increasing number of researchers are continuing to apply constructivist GT in their investigations of the complicated phenomena of contemporary educational world (Cunningham, 2015; Kenny, 2015; Latz, 2015; Marks et al., 2016; Mikhaylov and Fierro, 2015; Nickols et al., 2013; Okumu, 2014; Smith et al., 2012; Yeoh and Terry, 2013).

2.4. Research participants

In this thesis, the decisions regarding the search for and choice of research participants have been mostly made by taking into account the principles of one particular method of data collection, i.e. intensive interviewing. For a constructivist grounded theory study, Charmaz (2014), among other sources that can generate valuable data, points out intensive interviewing in particular. Intensive interviewing, according to Charmaz (2014), implies "a gently guided, one-sided conversation that explores a person's substantial experience with the research topic" (p. 56). As regards selection of research participants for intensive interviewing, the researcher has to consider interviewing those individuals "who have first-hand experience that fits the research topic" (ibid.). Therefore, in the beginning of my research I have located those participants who, to my mind, had this first-hand knowledge and experience that I was aiming to study. Thus, in the very beginning, the research participants were selected by purposive sampling. But the choice of research participants within the GTM is essentially guided by ***theoretical sampling***. In line with the principles of the theoretical sampling (Charmaz, 2014), as soon as a researcher starts seeing certain tentative categories to emerge, he or she arrives at a stage when he or she can embark on the theoretical sampling of research participants. As soon as a researcher has at his or her disposition these tentative categories that require further development, the researcher starts building on the strategy of theoretical sampling. Theoretical sampling is aimed at seeking "pertinent data to develop your emerging theory" (Charmaz, 2014, p. 193) and it should not be confused with conventional qualitative research tactics (ibid., p 197). Seeking pertinent data means that a grounded theorist does not seek representing a population and generalizability is not an issue within this methodology. As Charmaz (2014) explains, "Theoretical sampling involves starting with data, constructing tentative ideas about the data, and then examining these ideas through further empirical inquiry" (p. 199). Theoretical sampling is related to a very

specific type of reasoning called ***abduction***. As Charmaz (2014) notes, this type of reasoning stems from the pragmatist approach to problem-solving. Abductive reasoning means making inferences about surprising findings and checking these inferences by looking at more research data (p. 201). In practice, this means continuous going back to your research participants and gathering more data "to subject your new theoretical interpretations to rigorous empirical scrutiny" (ibid., p. 201).

In addition, constant examination and re-examination of data via ***the constant comparison method***, the essence of GT, determined all my decisions over who should be interviewed next after having conducted the analysis of data gathered during each interview and after having made inferences about what specific (and, in particular, surprising) bits of data that raised questions or doubts might imply. Overall, 20 interviews have been conducted for this research (16 hours and 8 minutes of recordings in total). The number of the interviews has been determined by the observations of data that have started evidencing obvious ***saturation***. In this research, I first noted down the signs of potential saturation quite early, with interview 15, but I continued gathering more data probing for my inferences and noting the increasing occurrences of the moments when I observed those repetitions in my data in my memos that signalled potential saturation. APPENDIX 1 lists the research participants with whom intensive interviewing has been conducted for this research and provides additional data about them (sex, age, country of studies and/or work, language of communication, duration of interview, and study programme or field of professional activity).

I started my research into the topic of media literacy in higher education in spring of 2013 by an initial purposive sampling. The first interview was conducted with an administrator of educational technologies to grapple around the state-of-the-arts in the educational use of technologies at university studies. Shortly afterwards, a small-scale group interview of three university teachers has been conducted to crystallize teachers' viewpoints regarding the impact of media on university teaching and learning. The first interview and the small-scale group interview served as a vantage point for anchoring initial open questions of subsequent interviews with students in 2014 about their use of educational technologies and, more broadly, media of information and communication in general, their information selection strategies, acquisition and use of different media for studies, the difficulties they encounter and the strategies they adopt for coping with the heavily technologized and densely mediated world. At approximately this stage, as certain very tentative categories (pertaining to student use of internet resources and specific popular search engines, in particular) started to emerge, an interview with a university teacher, delivering courses in law, e-space and information science, was conducted to see what additional significant properties could be possibly attributed to the initial concepts arising out of the data gained in student interviews. The interviewing done in the period of 2014–2016 was always guided by the logic of theoretical sampling. In 2015, for instance, thinking about certain gaps in my inquiry and about vagueness of the properties of the emerging tentative categories pertaining to student use of library resources I also realised that I have to talk to librarians about the role of library in the age of pervasive media, changing reading modes and preferences. The idea that I need librarians' viewpoints was also inspired by the unanimous state

of students that their first resort for researching a subject or topic is always a simple search via popular search engines. The intensive interviewing stage also included one follow-up interview in 2015. The follow-up interview took place as a result of thinking about a seemingly surprising preference of several of my student interviewees to opt for a paper book whenever it is possible. Therefore, to inquire in more detail about the experiences I had not covered fully enough before, I once again interviewed one student about this point and other hunches that kept my attention during the analysis of the interview data at that stage. In addition, three interviews have been conducted in 2016 at the Faculty of Education of the University of Córdoba to re-examine the data that had been collected and analysed until then and to see whether a different geographical, cultural and educational context bears any significant variation in the state-of-the art of media literacy in higher education. The University of Córdoba was chosen purposefully as it is one of the Spanish universities that is actively engaged in researching media literacy education in contemporary educational systems at all levels. In Córdoba, two professors (who also hold administrative positions in their institution) and one student were interviewed. The last interview in this research was conducted in 2016 to get insights into the viewpoints of those who have power to initiate educational changes politically; for that, I interviewed an official of the Ministry of Education of the Republic of Lithuania to see how the phenomenon of media literacy is perceived by educational policy-makers.

The choice of interviewees mostly from the Lithuanian context has to be explained as well. My decisions pertaining to the theoretical sampling have been guided by the observation that I have come across in one of the key documents on media literacy education, i.e. "Global Media and Information Literacy Assessment Framework" (2013) that 55 stresses that "A competency can only be observed within a given situation and context." (p. 55). Therefore, the interviews conducted with Lithuanian participants (some of whom have been chosen because they had some experience of international studies as Erasmus students as well and therefore could compare their experiences at home and abroad; this was something that I saw as a valuable aspect to consider as well) have rendered major data for the construction of the grounded theory in this thesis. However, some interviews with the Spanish participants were seen as necessary because (i) Spain is investing considerable resources into media literacy research and education and (ii) the Spanish participants have rendered 'critical incident' data against which it was possible to compare the findings acquired in Lithuania in order to test their logicality and substantiate their specific-nature (or, on the contrary, their geographically non-specific features as far as the present research could reveal).

2.5. Data gathering

In line with the constructivist GT guidelines (Charmaz, 2006, 2014), data is collected by conducting intensive interviewing until reaching theoretical saturation. Charmaz (2006) regards an interview as "a directed conversation" (Lofland & Lofland 1984, 1995 in Charmaz, 2006, p.25) which is particularly suited for interpretive inquiry. The broad, open-ended questions asked during such an interview are aimed at facilitating the participant "to

describe and reflect upon his or her experiences in ways that seldom occur in everyday life" (Charmaz, 2006, p. 25). Bryman compares unstructured interviewing to a conversation (2008, p. 438); however, Charmaz (2006, p. 27) points out some aspects that distinguish daily conversation from an intensive interview: in intensive interviewing, contrary to an ordinary conversation, a researcher asks to explain, to dwell upon some earlier thought, repeats the interviewee's story to verify the meaning. An interviewee, in an interview, becomes an expert, shares his or her story (and this sharing with the researcher leads to constructing "a coherent frame" of the experience. And thus both the research participant and the researcher co-construct the meaning of an experience.

An interview guide

Devising an interview guide is a very important step in preparing for interviewing within the constructivist approach. Charmaz (2014) is very comprehensive about the purpose and usefulness of an interview guide. First and foremost, an interview is open-ended and non-intrusive, allowing the participant to relay his or her experiences, views, interpretation, and understanding without forcing from the researcher's side. However, a researcher is guided by his or her quest for answers and obtaining explanations about processes that keep his or her mind occupied. Therefore, the role of an interview guide is crucial here. As Charmaz (2014) explains, "The combination of how you construct the questions and conduct the interview shapes how well you achieve a balance between making the interview open-ended and focusing on significant statements" (p. 65). Charmaz (2014) sees an interview guide as a flexible but important tool that (i) can and should be revised in the course of the research and (ii) that helps a researcher to avoid "asking awkward, poorly timed, intrusive questions that you may fill with unexamined preconceptions" (p. 62-63). Interview guide may be devised as a list of topics to be covered during the flow of a conversation. For this thesis, my interview guides were devised, used, revised, and newly devised as flexible tools containing open-ended questions that helped to start an interview and achieve a natural and comfortable conversational flow throughout an interview. Charmaz (2014) advises to "re-evaluate, revise and add questions throughout the research process" (p. 66). More often than not, the original sequence of questions was not followed in order not to interrupt the interviewee and sometimes the first two or three questions sufficed for almost entire interview. Most importantly, detailed preparedness for an interview and well-thought-out interview guides served as tools helping to examine my own preconceptions and to formulate questions in the way that would not interfere as much as possible with the research participants' flow of ideas and conversational pace. Interview guides in this research have served as an aid, which was applied flexibly and was fine-tuned during each interview depending on each participant's individual traits and specific context in which interaction occurred (in line with the principle, which Charmaz (2014) suggests to follow for constructivist grounded theorists, of giving "the participant's comfort level higher priority than obtaining juicy data" (p. 66). However, as the research acquired momentum and tentative categories started to take shape, the interview guides were supplemented with some more focused questions that would enable to probe for emerging categories deeper. This is a natural stage in interview study as interviewing, followed by systematic analyt-

ic work, provides a researcher with insights and hunches that need further examination through collection of specific data to learn more about the emerging categories.

Examples of the interview guides that I used during interviewing are provided in APPENDIX 2 and APPENDIX 3. It has to be noted, however, that in no interview the guides were adhered to strictly. In all cases, my main purpose was maintaining an interview as natural as possible without imposing my views on research participants. In many cases, these guides were used very minimally – as a lead-in or as assistance in not getting too astray from my object of research. The interview guides provided in the appendices are in Lithuanian and in Spanish only. During interviews were English as a language of communication was used, I translated and tailored the questions on the spot.

2.6. Data analysis

Assistive tools

Data analysis within GT means data processing during the stages referred to as "coding". Charmaz (2014) defines coding as "[...] categorizing segments of data with a short name that simultaneously summarizes and accounts for each piece of data" (p. 111).

To ease the processes of coding, I have employed some tools that technically facilitate such work as segmentation of texts into units for codification, creating code lists, locating particular codes in a text, avoiding introduction of very similar codes that unnecessarily enlarge the list of codes, or making sure that you do not loose valuable pieces of data or valuable codes as they are securely saved by the tools and are easily accessible at any time in your computer. For this research, I have employed AQUAD 7 software that is described as "a program for the generation of theory on the basis of qualitative data" (Huber & Gürtler, 2013, p. 10).

For this research, AQUAD 7 was employed for conducting the initial line-by-line coding of data Technically, AQUAD 7 is helpful in doing line-by-line coding: codes attached by the researcher are inserted below each coded line automatically by the software when coding texts. The attached codes are also available in a separate "master code file" in case a researcher wants to look at all of them anew in a list. This has been found very useful because reading through initial codes in a list may spark new hunches and the need to go back to the particular text line to cross-check the meanings. The constant going back to data and revising is one of the essential elements in GT that also contributes to ensuring quality of the research. Besides, during the initial coding with AQUAD 7, the programme suggests codes from the master code list to see if there already has been a similarly formulated code in some other previously coded text excerpt. The advantage of this function is that it helps to control the precision of your codes from the start and to avoid producing too many similar and unnecessary or overlapping codes. AQUAD is also very useful in quickly finding a required excerpt from interviews for a particular code when writing memos or drafts of larger texts. With large amounts of data, even as meticulous a coding as line-by-line coding needs constant revision of codes against textual data so that the implications of a code that a researcher meant during coding do not get distorted at the end of coding large amounts of data, extracting hidden and abstract, theoretical meanings at later stages of research and writing. The analysis of the final master code list in parallel to the analysis of a particular

code in its context also yielded valuable insights and assisted in seeing the data and codes in a new light at the writing stage of the thesis.

In further, more analytical and conceptualised stages of coding processes (focused and axial coding), another tool – Cmap software – has been extensively used to do interim diagramming. The Cmap tool allows drawing and editing diagrams. Diagramming (a visual representation of ideas, concepts and their relationships, processes, etc.) is a very important part of the ongoing analytical process both within the constructivist GT and other GT versions of the second generation. The diagrams created with the Cmap tool have been mostly done at the interim focused coding and axial coding stages during the writing of the initial draft and have supplemented the observations made in the memos of the research. Though diagramming can be easily done on paper and the use of software is not required by the constructivist GT, the availability of this tool, just like the AQUAD 7 software, have considerably eased the process of managing large amounts of textual data and have made it possible to have the materials in my computer at any moment I might need them. The final figures in this research have been created with Microsoft Word function of Smart Art.

Coding stages in constructivist GT

Charmaz (2014, p. 109) points out that GT coding is done in at least two stages, the initial and the focused coding, that can be sufficient in some cases. Axial coding is not necessary within the constructivist GT but it has been done in this research. Theoretical coding either stems from the focused coding or axial coding, if axial coding is also done.

During the ***initial*** coding of the constructivist GT approach, data is studied word-by-word, line-by-line, or incident-by-incident. In this thesis, I have conducted line-by-line coding. Charmaz (2014) thus explicates line-by-line coding: "Line-by-line coding, the initial grounded theory coding with gerunds, is a heuristic device to bring the researcher into the data, interact with them, and study each fragment of them." (p. 121). Line-by-line coding is particularly suitable for studying "data about fundamental problems or processes" (Charmaz, 2014, p. 125). In linguistics, *gerunds* are verb forms that function as nouns but refer to processes. The use of gerunds in line-by-line coding ensures focusing on the studied processes rather than merely topics or themes. Besides, line-by-line coding as a heuristic device works very well with intensive interviewing (Charmaz, 2015). An excerpt of the data of this research coded line-by-line is provided in APPENDIX 4.

The second phase in data analysis is the ***focused*** coding. As Charmaz (2014) notes, "The move from initial to focused coding is often seamless. [...] moving to focused coding is not entirely a linear process" (p. 141). Some initial codes have stood out as very meaningful from the very start of the research (for example, "saving time"), and though sometimes it took some time to choose the most appropriate wording for them at an early stage, they still retained their conceptual significance in the run of the analysis and kept recurring in the mind while analysing other batches of data. Essentially, focused coding implies a closer analytical look at what Charmaz (2014) calls "telling" initial codes (as the one mentioned above) or constructing "a code that subsumes numerous initial codes" (p. 138) (for example, "merging entertainment and learning"). Looking from the current position, it is clear that, in this research, the "seamless" transition from initial coding to focused coding oc-

curred when the focused coding was being simultaneously done in two veins: (i) analysing coded texts alongside initial codes in each interview and (ii) analysing initial codes from master code list (to test the soundness of initial codings of individual interviews against more incoming data from subsequent interviews). What is more, the initial coding and the focused coding in this research ware the phases that required most time and effort in comparison to other stages: extracting codings from individual interviews (working on *telling initial codes* alongside coded texts) lead to construction of code groups (at first done on paper with coloured pencils) and devising of more abstract concepts *subsuming relevant initial codes* from data across all available interviews. At the end of the focused coding stage, 6 major dense subcategories (dimensions of would-be axial categories) with their emerging properties have been constructed that encompassed large batches of data that evidenced some significant commonalities across all data. An excerpt from one of the focused coding tables is provided in APPENDIX 5.

The **axial** coding stage in this research meant devising two axial categories of MORPHING and ANCHORING. According to Charmaz (2014), "A major purpose of axial coding is to bring the data back together again into a coherent whole after the researcher has fractured them through line-by-line coding." (p, 341). However, it has to be noted that in this research this was not an intentionally pre-planned stage waiting to be embarked on. Just like in the transition from the initial coding to the focused coding, the transition to axial coding was very natural (though it must be stressed that "Axial coding is a procedure *applied* to the data, rather than emerging from them." (Charmaz, 2014, p. 341). The axial coding procedure had come to be seen as applicable when the two would-be axial categories acquired some visible shape as exceptionally dense, meaningful, and much more analytic and abstracted categories than the other categories constructed so far. Consequently, further analysis meant re-arranging significant focused codes under 6 subcategories (dimensions) and defining their inherent relevant properties.

Though axial coding is not necessary in constructivist approach, Charmaz (2014) allows for the researcher's involvement in the axial coding stage if need be. However, she does not use axial coding in line with the strict structural procedures of axial coding prescribed by Strauss and Corbin's: "I have not used axial coding according to Strauss and Corbin's formal procedures; I have developed subcategories of a category and showed the links between them as I learned about the experiences the categories represent" (p. 148). Axial coding leads to developing relevant properties and dimensions of categories. But Charmaz (2014, p. 150) points out that a researcher has to consider carefully how useful axial coding can be for a particular research: "At best, axial coding helps to clarify and to extend the analytic power of your emerging ideas. At worst, it casts a technological overlay on the data – and perhaps on your final analysis" (p. 150). I have decided to do axial coding in this research because of my assumption that axial coding – if used flexibly, only as a means allowing for more structured analysis in the conceptual phase of data analysis and as a means of confronting ambiguities (tolerance for ambiguity has been pointed out by Charmaz (2014, p. 148) as one of deciding factors for a researcher whether to engage in axial coding or not) – could be useful for this particular research. As a result, it proved to be so in my research as in this phase I have crystallized the two key axial categories of media literacy in higher edu-

cation. Moreover, the transition from the focused coding to axial coding occurred naturally during the analysis of data when I started noticing that my focused codes can be logically grouped into two even more conceptually abstract axial categories that have consequently formed the backbone of the theoretical GT construction called *The Sandglass* in this thesis.

Memo writing

Memo writing, the core analytical process in a GT, has been done throughout the entire phases of this research. It is natural for memos to become more analytic in the run of the research and thus the writing process begins at a very early stage of a GT research. The observations about interviews, the inferences that the researcher has during the interviews, the constant comparison of previous and incoming data – all of this is noted in memos that later serve as valuable material to be used in the theory building. Memos first of all serve as "informal analytic notes" (Charmaz, 2014, p. 162). Within the constructivist GT, it is essential to look behind explicit meanings of the research participants in search of tacit, implicit meanings that are very important: what is implied but not explicitly stated carries much significance in the constructivist GT.

Memos written in the beginning of the research tended to be very short notes regarding the date, the name of the interviewee, and some scarce notes about interesting points made that deserve further probing or some questions that arose during the interview. When the research progressed, memos became longer and more analytic. This was firstly evident in that a memo could be easily given some title subsuming (and thus more abstracting) the meaning conveyed by a research participant. Technically, the AQUAD 7 software came in very handy because each memo has automatically given an indication to the exact line(s) in the textual data to which the memo is attributed thus facilitating later retrieval of the extract if need be for revision, further analysis, editing a memo, building or formulating wordings for emerging categories. With AQUAD 7 a researcher can extract either memos written for a particular interview or memos of the whole project in a list. Both options are useful, but the whole project list is also useful as a kind of "methodological journal" that Charmaz (2014, p. 165) suggests keeping. This journal (my "memos of the whole project" list is 37-pages long) now serves as a very informative reminder of how my research progressed: for instance, at this moment, it is very interesting to trace back when I started developing the idea of representing media literacy in higher education visually by the image of the sandglass, or when and under what circumstances I understood how in fact students searching for information make decisions regarding sources that they opt for because of the impact of technologization, the proximity of the virtual world of knowledge in the gadgets, and the constantly experienced lack of time: that "opting for simplicity" is the consequence of the human-media symbiotic relationship. Also, the journal has provided important material for the "Findings" and "Discussion" chapters of this thesis. Some of the memos written for this thesis are provided in APPENDIX 6.

A note on translation done during data gathering and analysis in this research

What remains to be pointed out in addition to the aspects of doing a constructivist GT research in this thesis concerns the translation process that I had to engage in in the data

gathering and analysis stage because of conducting my interviews in three languages (Lithuanian, English and Spanish) and writing my thesis in English. Charmaz (2014, p. 331) highlights "the centrality of language". Translation done in GT research has been discussed in research publications (Nurjannah et al., 2014; Shklarov, 2009; Tarozzi, 2013). Shklarov (2009) considers translation to be an important element of the constant comparison method, Tarozzi (2013) regards it as "intercultural mediation", analytic resource, and a powerful analytic tool, and presents philosophical and methodological considerations about the integration of translation in a GT research. Nurjannah et al. (2014) define procedures of translation in a GT process such as translation in the process of coding, translation in the process of team discussion, translation in the process of advanced coding, and discuss the questions about who should translate and how translation quality is assured, especially when working in a multilingual research team. However, in this research, as I was the sole researcher of my data and because of my background (my Bachelor studies in the English philology and studies of Spanish language and my Master studies in linguistics and many years of professional translation) and followed the methodological suggestions of Tarrozi (2013) who draws on the parallels between GT processes and translation processes, for instance, semiotic analysis of the source text in translation is seen as parallel to the focused coding in GT, or interpretation in translation is seen as parallel to theoretical integration in GT. First and foremost, translation done during data gathering and analysis for this thesis has served as an effective analytic tool of the explicit and implicit meanings of the research participants.

2.7. Researcher's self-reflection

Peters (2014) mentioned one of the common American sayings "Research is mesearch" implying that in any research attempt there is a very personal interest of the researcher rooted in his or her wish to know better himself or herself. This saying indeed reveals much about the reasons of my decision to embark on the study of media literacy in higher education for my doctoral dissertation. My university teaching career began back in 1998 and has been related with teaching English for specific purposes in a number of social sciences Bachelor programmes (law, social work, psychology) as well as English philology programmes (Modern English, Morphology, Translation, Discourse Analysis subjects). All this time I have been searching for answers to the questions very similar to the issues that I am raising in this thesis as well. Since the last decade of the 20th century, I have been observing the changes brought about by media and their impact on learning, teaching, knowledge construction, and information search. But until 2012, when I began my PhD studies, I did many things intuitively, closely following the daily empirical life of mine and that of my students in educational settings, and since 2012 I was given a great opportunity to investigate the issues that have kept my attention for so long more in-depth in the fascinating world of educational science.

Charmaz (2015) is very clear about the importance of the researcher's reflection on the nature, motives and implications of his or her involvement in research: she calls paying attention to one's standing points (i.e. where one comes from), one's views shaped by their

position in society and worldviews, ones statuses and power (or lack of power). I think that all of the things said above about my professional background have strongly influenced the way I have been constructing my grounded theory of ***The Sandglass***: when my interviewees continued referring to the constant pressure of time they were experiencing in their daily lives and studies or work, I did not take it as a common complaint heard in daily informal conversations but I took it as something that implied a serious issue that connotes very complex (but often ignored as too trivial and so common to everyone) implicit meanings deserving a closer analytical approach. Thus in this sense my research is what Peters (2014) refers to as "mesearch": in this respect I was in no way different from my research participants. What they referred to as "lack of time" in dealing with their daily assignments and tasks at university or at work was also my constant concern. What I differed in though was my position as a PhD student who was trying to approach the issues I was raising in my research with a fresh look and strong wish to understand the things that people usually take as ingrained and natural, as if our life has become such and the circumstances (technologization, mediatisation, the ubiquity of Internet, much of the physical life extending into the virtual realm) have to be taken unwittingly. I am particularly satisfied about the choice of the methodology for approaching my concerns. is very well reflected in the following quotation from Charmaz (2014) notes, "Grounded theory methods can provide a route to see beyond the obvious and a path to reach imaginative interpretations." (p. 323). Though I paid a closer look to this quotation much later than I embarked on the research within the constructivist GT (when I was re-reading the new 2014 edition of "Constructing grounded theory" by Kathy Charmaz), just like with many moments during my data gathering, data analysis and writing drafts of my thesis, I enjoyed once and once again what I have learnt during the six years of my PhD journey: never let skip the seemingly obvious from a closer scrutiny.

My readings about the contemporary approaches in educational science to studying the contemporary phenomena have contributed to making the decisions over choosing the constructivist GT very early. But I have had my difficult moments when I had to resolve problems (such as writer's block or doubts about the quality of my research). Passing through a stage of hopelessness was common, when it seemed that nothing crystallizes from my data though the feeling that something lurks there unrevealed was persistent. One overcomes this hurdle spontaneously when one starts thinking about the data either intentionally or unintentionally at any unplanned point of one's waking time. What may also contribute to this feeling of hopelessness is that at some point one starts feeling tired: this usually happens when transcribing takes much time and results in tiredness and even boredom and every code you attach to a piece of data seems to be too shallow to be worth attention and deeper thinking. Self-criticism for not being able to come up with something rich also starts nagging on you at some point. But looking at it from now, this is to be taken as an inevitable stage on the way to understanding. The hopelessness overcomes you and then goes away. This seems to happen when transcribing is over, for instance, or when finishing writing a part of your thesis leaves you satisfied, though full of doubts: like never taking the obvious for the obvious – something that never leaves you with the feeling of having understood it all.

2.8. Principles of research ethics

Bryman (2008) points out that "Discussions about the ethics of social research bring us into a realm in which the role of values in the research process becomes a topic of concern." (p. 113). The *values* in the research process are evident in "how we treat the people on whom we conduct research" (ibid.). This research has been guided by utmost efforts to establish and maintain a relationship between me and my research participants that is grounded in mutual trust. This has been achieved by explaining to would-be participants my interest in conducting the research.

Bryman (2008) suggests following four principles that were formulated by Diener and Crandall (cited in Bryman, 2008, p. 118) that have to be taken into consideration: avoiding causing any harm to participants, getting informed consent to participate in research, avoiding any invasion of privacy, and never engaging in any deception (when researchers present their research as something that it is not). The principle of not causing harm could be easily applied in this research as the object of the research does not target sensitive deeply personal issues. The principle of not engaging in deception has also been absolutely complied with as the very research design of the constructivist GT and its principles are antithetical to any deception.

Getting informed consent of each research participant was seen as one of the key steps in this research. I contacted most of my interviewees via email asking them non-intrusively if our interview was possible; explaining my reasons for asking to take part in this research, explaining my object of interest, promising absolute confidentiality of personal data, asking for a possibility to record the interview and promising saving the recording strictly for my research and quoting the excerpts by supplying codes to the interviews and never using their personal names, stressing that the interview could be discontinued at any moment should they wish so. Several research participants asked for some clarifying questions or some explanation of what I was planning to ask during the interview to be sent to them in advance. I took it as their wish to feel secure during interview and in these cases tried to provide them some very general questions such as "How do you search for information for your assignments?" or "How do you find out the news of the day?" In one single case, one person refused to take part in my research explaining that she believed she was not competent enough to talk about my topic. I thanked her politely and (seeking to reduce her potential distress about refusing to be interviewed) confessed to her that I myself have once refused to be interviewed for the same reason.

If I did not communicate with a research participant via email (when I contacted them directly), I informed them about the above mentioned issues during our conversation and in all cases, at the beginning of the interviews, I talked about these issues once again reminding my research participants of my promises given to them and my commitments to ethical research. The principle of not invading *privacy* has also been seen as essentially important and has been complied with during the interviews by not asking any personal questions outside the scope of my research concerns. In addition, I always allowed my participants to suggest the time for the interview most convenient for them. Subsequently, I made sure to find such a room for the interview that would be comfortable and silent, without any other people present in the room.

2.9. Reaching for quality

The GT procedures (theoretical sampling, abductive reasoning, constant comparative method, and data saturation) inherently include many elements that assist in reaching for quality at every stage of research. Thus, reaching for quality stands out as an essential guideline from the very start of a GT study. In addition, Charmaz (2014) points it out that a carefully done initial coding leads to achieving **fit** and **relevance**: "Your study fits the empirical world when you have constructed codes and developed them into categories that crystallize participants' experience. It has relevance when you offer an incisive analytic framework that interprets what is happening and makes relationships between implicit processes and structures visible." (p. 133). The *fit* criterion is particularly important in a qualitative study because it tackles what Bryman (2008) refers to as addressing "the question of error" (p. 395): "In qualitative research, the investigator seeks to reduce error by ensuring that, for example, there is a good fit between his or her concepts and the evidence that has been amassed." (ibid.). In a constructivist GT study, the renderings of the studied phenomena and processes can hardly be assessed in terms of being right or wrong, or erroneous, because of the premise that meanings of the researched worlds are interpretive and co-constructed, and a co-construction can hardly be weighed in such terms. Rather, an important implication of applying the *fit* criteria in Bryman's terms for a GT study is that a researcher is always aiming at constructing such codes and categories that "crystallize participants' experiences" (Charmaz, 2014, p. 133), i.e. the codes and categories are always grounded in participants' accounts. Therefore, throughout my research, I was putting all my effort into staying as close as possible to my research participants' meanings by asking to clarify their viewpoints at certain points so that not to superimpose my views on them but rather to crystallize their intended meanings.

Reaching for quality in a GT research starts as early as data gathering. Gathering "rich, substantial, and relevant data" (ibid., p. 32) leads to credibility of a study. Such data are necessary for constructing key analytical categories, and this, in turn, entails two other criteria for quality data, i.e. "their *suitability* and *sufficiency* for depicting empirical events" (p. 32). In this thesis, gathering **rich**, **sufficient**, and **relevant** data has been one of the determining factors in the theoretical sampling procedures and in determining the point of theoretical saturation in this research. More specifically, tailoring of preliminary interview questions while preparing for each interview involved careful thinking about each interviewee, his or her field of expertise or experience and possible contribution to the researcher's better understanding of the researched phenomena and relevant issues. This explains why there was no pre-planned list of interview questions to be strictly adhered to in each interview and the interview guides provided in the appendices considerably differ according to differing contexts.

Initial line-by-line coding has been very time-consuming stage as it required attentive reading and re-reading and iterative analysis of data. Constant comparative analysis of the data has been done from the beginning of the research in order to safeguard the collecting of further relevant data and simultaneously carry out analysis of available data in comparison to the implications of the incoming new data. I have also put much effort into gathering

sufficient background data about my research participants to make sure that their views and accounts would contribute to enriching my categories and reveal to me the significant processes and contexts that are implied by their specific accounts. In addition to close focus on the accounts of their experiences in their verbal data, I was always searching for the implied but not directly stated meanings in the recounts of their experiences. Staying very close to their renderings and their wordings has been essential in conducting my initial line-by-line coding because of one guideline that was always keeping in mind at that stage: "Studying your data through line-by-line coding sparks new ideas for you to pursue. Hence, the grounded theory method itself contains correctives that reduce the likelihood that researchers merely superimpose their preconceived notions on the data" (Charmaz, 2006, p.51).

As regards evaluating a GT study, Charmaz (2014, p. 336-338) points out the criteria of *credibility*, *originality*, *resonance*, and *usefulness*. Charmaz (ibid.) lists the guiding questions to be considered in evaluating a GT study according to these four criteria.

Firstly, as regards reaching for **credibility** in this research, I have been seeking to achieve an "intimate familiarity" (Charmaz, 2014, p. 337) with my data, topic and setting in order to ensure that any decision I make or any conclusion I draw is based on my as close as possible acquaintance with the entire context from which I am drawing my data and insights. This has also served in figuring out the moments when the amount of gathered data and its implications have been defined as indicating the potential sufficiency of data in terms of "the range, number, and depth of observations contained in the data" (ibid.). Consequently, constant systematic comparisons (of data with new incoming data, of previous observations fixed in the memos with new insights, of previous codes, new codes and conceptual categories in the course of crystallizing the implications contained in the codes and categories) have been done to ensure the coherence of the constructed codes, categories and descriptions. What is more, a comprehensive literature review also contributes to and strengthens the *credibility* of a constructivist GT: "Completing a thorough, sharply focused literature review strengthens your argument – and your credibility" (ibid., p. 308). Thus, I have sought conducting an in-depth analysis of *The Sandglass* theory in the background of the existing literature. In this thesis, I have put every effort into looking at it, as Charmaz (2015) points it out, from the angle that "speaks to" the constructed categories in a much more focused scope that draws relations between my analytic categories and the relevant implications in the existing literature.

Secondly, the criterion of reaching for **originality** of the categories has also been seen as very important. As the constructivist GT seeks an "informed grounded theory" (Thornberg cited in Charmaz, 2014, p. 306), the researcher's acquaintance with the existing knowledge in the researched field guarantees safeguarding against "reinventing" something that is already known. Therefore, a reflective and critical approach of the researcher is needed in formulating one's own arguments. To ensure this, I have followed the advice of Charmaz to "remain alert as to whether, when and to what extent earlier ideas and findings enter your research and, if so, subject them to rigorous scrutiny" (ibid., p. 307). Originality of findings is evident in how much a GT *challenges*, *extends*, or *refines* the existing knowledge. In this thesis, I have not sought to challenge the existing conceptions because of the very

object of my research, i.e. media literacy in higher education, because the object itself, the phenomenon and the processes are rather "fluid" and difficult to capture in strict and rigid terms due to the complex nature of the symbiotic human-media relationship; rather, I have attempted *extending* (from the processual perspective) and *refining* what is already known following what I have found out in the course of my research.

Thirdly, **resonance** has been sought by attempting to cover "the fullness of the studied experience" (ibid., p. 337). Within the constructivist GT, *fullness* is sought by taking into account the range and depth of the data and, importantly, attempting to reveal "both liminal and unstable taken-for-granted meaning" (ibid.). In this research, I have put much effort into necessarily describing what I saw as liminal or taken-for-granted meanings by always allowing my research participants to narrate their experiences in their own words by me engaging in active listening and requesting to clarify the research participants' meaning when I saw it pertinent. Charmaz (ibid., p. 338) also suggests "to draw links between larger collectivities or institutions and individual lives, when the data so indicate". Therefore, this has led to my decisions to conduct interviews with those people who not only have university teaching experience, but have also have more cross-sectional experience, for example, who have worked as administrators and / or researchers; a librarian who has also been teaching; an educational technologist who is closely familiar with concerns of students and teachers regarding the use and the role of media in learning and teaching; and a public servant at the Ministry of Education and Science to gain better insights from the policy-making perspective.

Fourth, as regards the **usefulness** criterion, I have been trying to construct such an analysis that could help people to better understand the processes occurring in their worlds and their activities. Within a constructivist GT, this is achieved by developing rich descriptions of data and findings by remaining close to the research participants' worlds and accounts. Though strongly localised, this GT research has also been guided by the objective of constructing such categories that would cover or at least touch upon "generic processes" (ibid., p. 338). The processes that contemporary educational systems are undergoing indicate the necessity to re-think what it means to be literate today; therefore, *The Sandglass* theory can contribute to some better understanding of the teaching and learning processes under dense mediatisation of the reality despite of being substantive and localised in terms of data gathering and scope. In addition, this GT offers suggestions for further research that are pointed out in the Recommendations section of this thesis.

Writing the description of the GT in this thesis (in terms of the writing process and relevant ethical writing issues) has been done aiming at the **thick description** (Geertz cited in Bryman, 2008) of data and its implications and by taking into consideration the **ethical issues in writing** (Creswell, 2009). Firstly, memo-writing is of key importance in a GT study because memo-writing contributes to the quality of the GT. Charmaz (2014) maintains that coherent, detailed and comprehensive description is vital but also stresses that a GT description should not be merely descriptive but, first and foremost, analytic in terms of the analytic nature of codes and categories and in terms of the writing processes (e.g., memo-writing or theory development) (p. 15). Therefore, seeking and doing analytic description has been seen as very important in this thesis. Ethical writing implies using

unbiased language against persons (Creswell, 2009, p. 92). In this thesis, for example, I have tried avoiding in all cases any judgmental evaluations regarding media literacy skills of my research participants bearing in mind the caveat of engaging in judgmental assessment or adopting a judgmental or know-all tone in those cases where media literacy skills could be assessed as poor. Also, ethical considerations in writing that are pertinent to a rich GT description mean cautioning against "the potential of suppressing, falsifying, or inventing findings to meet a researcher's or an audience's needs (ibid.). In addition, I have put my every effort into crediting and referencing authorship of all authors whom I quote or refer to in this thesis. And, finally, I have sought to describe in as much detail as possible all the procedures, steps, and relevant aspects regarding how I conducted this research in order to, as Creswell (ibid.) suggests, allow the readers to judge for themselves how credible the research is.

In this chapter, the findings acquired during the **axial** coding stage are described. The findings reveal two axial categories, 1) MORPHING and 2) ANCHORING. The two categories are analysed here in the light of their subcategories (dimensions with their particular properties) and the established links between them. During this axial coding stage, the data coded during the initial coding stage was re-examined from a more analytic and conceptual perspective.

3.1. Morphing: knowledge construction and learning in the densely mediated world

MORPHING is an overarching concept encompassing complex dimensions of media-saturated human existence. It has been found to embrace the following three dimensions: (i) the ongoing *symbiosis* of the human being and media (external co-existence, internal condition, and the ongoing process – adjusting to the new co-habitat); (ii) the *merging of entertainment and learning*; and (iii) tackling the *granularity* of knowledge construction.

3.1.1. Symbiosis

Symbiosis implies the co-existence of the learner (and his or her learning environment termed *locus*) and media through learner-media interaction that can occur in three ways (*modi operandi*). These ways can be spontaneous (natural), controlled to some extent (negotiated) or increasingly more directed (as an individual's level of media literacy rises due to undergoing some media education and increasing awareness about the nature, role and impact of contemporary media on knowledge construction).

Symbiosis, the first of the three dimensions with its particular properties pertinent to the axial category of MORPHING, is depicted in Figure 1.
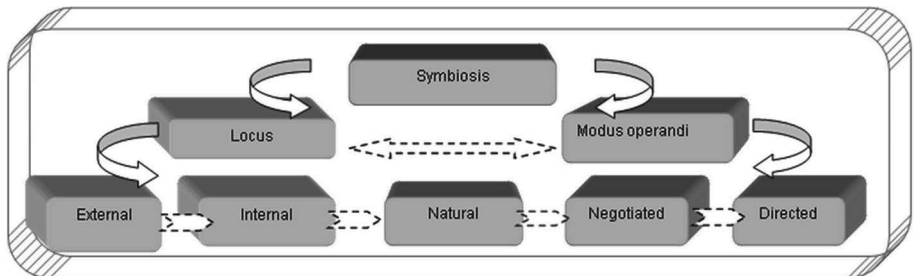

Figure 1. *Symbiosis*

Locus refers to the environment of occurring changes – it can be *external* (changes are manifest in the learner's environment) or *internal* (either inside the individual or in media

(through their increasing sophistication and adapting to the supposed user needs, e.g. personalisation)). As evidenced by the data, the *locus* maintains obvious links between (i) changes in human identity and self-perception and (ii) the ways we adopt and use media in our daily activities. These two aspects are termed here 'the internal locus' and 'the external locus'.

The internal locus

As regards the internal locus, it is necessary to analyse why the human-media symbiosis often goes unnoticed by an individual, or, to be more exact, **not perceived** as such, because it is taken for granted without questioning its implications critically. The element of spontaneity and immersion is one of the most vital elements in comprehending how the symbiosis occurs: *"In fact, you surely understand that it is difficult to cope with all that information, but Google uses intricate complex semantic networks and interface systems. So, actually, it [Google] selects for us so much and offers us information that is sorted in a very smart manner and we are there, totally unaware, of what is happening. Well, this is one side of it. Another side is that – I cannot actually explain that now in exact words – you just learn filtering information and that's it"* (P1ET). What is important here is that an individual acknowledges the impact to a certain extent but refrains from getting deeper behind what is happening. This position is significant as it evidences how we co-exist in our heavily technologized and mediated environment. What is more, as soon as we start admitting our mutual inter-dependence, we continue using media unquestioningly relying on them being smart.

The internal locus is an important property of human-media symbiosis as it is related with the perception and construction of learner **identity**. In educational settings, this means that much of what a learner experiences in his or her use of media goes on unperceived and not analysed more in-depth. The extension of an individual's physical reality into the virtual space bears significant implications for how learning occurs. For instance, a close proximity of social networks in one's gadgets results in constant urge to open one's accounts. This urge is strengthened during classes in a formal educational setting when a social network is in some way related to learning, for instance, if the materials are shared by one's groupmates in a social network or if there are people or "experts" there who can give you immediate answers. A learner is present both in the physical space and in the virtual space. *"So, Moodle requires some minimal effort – and effort means effort – from the students to find time and space to access it. Meanwhile, they can do it instantaneously in Facebook. Or in WhatsApp. These are always by your side. It is because they [students] assume that one can consult Facebook or WhatsApp at any moment. While Moodle, for sure, is associated with work – with work and work environment – and you are required to use it during study hours"* (P19T). The VLEs such as Moodle are often described as boring and too serious, lacking personalisation, while social networks form an already in-grained part of one's constructed identity. What is more, social networks seem to be easily manageable and are personalized. Moreover, the felt necessity to live in constantly updated information flows is also related to the perception of one's identity. *"[...] they [students] need to be constantly connected to continuous information updates"* (P19T).

The formal institutional environment is seen as too distant from one's self. *"It's difficult to explain it, but if you are not in Facebook, you do not exist. [laughter] [...]. You will certainly find someone to help you in Facebook, because so many of us are there."* (P8S). Thus it is a

real challenge for a teacher to convince the learner to restrain from consulting sources available via popular social media. Moreover, it is questionable whether a teacher has to do that and whether a forced use of an institutional VLE can be justified. The preference to consult sources of one's own choice arises from the link existing between learner's physical and virtual identities. A formal institutional VLE allows little if any personalization of the learning space. Meanwhile, the social networks used for informal daily communication are being associated with one's identity. *"Facebook is actually the space which is your second virtual identity, not some external environment where ... I don't know ... you live your life. It is like part of one's personality, especially for young people"* (P16T). Social networks subsume multiple daily activities encompassing various spheres of life. It may seem wise to distinguish between different social networks on the basis of the formality; however, Facebook seems to encompass almost everything and thus satisfy a learner's need to quickly access information and find answers without putting too much effort into information search. Through media, human identity has extended into the virtual realm. Thus, a learner is present physically in the classroom and at the same he or she is present in the virtual realm through being connected to social media.

An important element pertaining to the internal locus is that of "***being accustomed to something***". This feature seems to be so deeply ingrained that any attempt at changing it would result in some internal discomfort. Therefore, from the very beginning of the research, the deep penetration of media into the human existence has been noticed to resemble a symbiotic relationship. The term "symbiosis" is used in the field of biology where it refers to a long-lasting and very close relation between different species. Thus, the insight has led to asking what inferences can be made when learners state that they prefer a paper book because of being accustomed to them from early childhood or, on the contrary, what inferences can be made when learners state that they prefer free and quick options of information search when information is found in very close proximity – the gadgets in their daily lives. Intricate changes are occurring in the internal locus of human-media symbiosis. The changes are manifest in the states of participants referring to their preference for a certain mode of information search – either on paper or on screen. Though seemingly contradictory, their preferences indeed are rather compatible as both evidence the human-media symbiosis that is going on unnoticed. Intricately, in stating their preference for either paper or screen, participants refer to "being accustomed to it": *"But for me, if there is a [paper] book available, I opt for the book immediately, because – I just do not know why – I don't quite like that artificial light. It is somehow different on screen. And your eyes sore. [...] Yeah, I have the apps, in my phone and in my tablet. But I do read. I do read. It is convenient when travelling or else. But it is so convenient because you don't have to drag the book along. But at home, for example, when preparing for some assignment, for example, when you can choose between a paper book and e-version, I opt for the paper book. Because it is just easier for me. There is some kind of relationship with a book. Because somehow we were accustomed to it from an early age. To that simple paper book. And nowadays, I think, those growing up with technologies, they are becoming more accustomed to all those apps"* (P8S). Just as like, another participant pointed out "being accustomed to screen reading" because it allows finding required information quicker in comparison to searching physical library resources: *"Yes, it is possible [searching paper books in a library], but we are already more accustomed to quicker and more effective ways of searching"* (P9S). The symbiotic

co-existence of humans and media is so tight that it is difficult to challenge one's own assumptions about the effectiveness of one's use of technologies and media. This is one of the reasons why the importance of media literacy has not been fully acknowledged yet. This is reflected in the following state of one of the participants: *"There were these library courses... seminars. But now we will attend them once again. Because of our bachelor papers. Will repeat things. But I think, that in fact I already know it all"* (P10S).

Information on the Internet is very "fluid": it changes quickly, and the amounts of available information are increasing rapidly. In addition, the quality of information easily available in the virtual sphere is often a problematic issue that is not given enough attention. Therefore, it is crucially important for a learner to remain agile at all times. One participant defined the current interim condition very aptly: *"It is as if you have joined that movement. It is an illusion of movement – it is always there. That's why I say that it seems that, you know, we are a little bit dizzy amidst all these technologies"* (P16T). Thus our ongoing and yet difficult to define co-existence alongside the traditional and new technologies and media bears implications for how we cope with our assignments, for instance, those relating to learning and studying. The flexibility of the human mind and the adaptability of the habits to new circumstances and conditions allow for ongoing symbiosis: when different kinds of entities live together in mutual inter-dependence.

The external locus

The internal locus bears links to the external locus of the human-media symbiosis. The external locus essentially refers to the impact of media on human habits, thinking, emotions and feelings resulting in certain actions. In educational settings, these actions imply learner's engaging with assignments, coping with assignments, and, consequently, achievement.

Habits are looked upon here as related to particular established preferences of students for using particular media. As regards paper and screen media and information searching preferences of students discussed above, both media remain significant when studying. Some significant implications are expressed by one of the participants, a librarian who also has university teaching experience, regarding media used by students for studies: *"I think that traditional books, traditional text-books, will not disappear. Maybe we will be using less of them, but we will continue using them. Just think – with the advent of electronic mass media everyone predicted the end of newspapers. It might happen in 20 years, but so far newspapers successfully exist in both versions – paper and online. So I think that equally paper books will continue existing. By the way, I remember a book, "An Introduction to Philosophy" by Arno Anzerbacher, published in 1992. It is a text-book. It is written in a manner very similar to the internet texts of today. In this book, an underlined word indicates a reference to another chapter. It is a kind of tree that you can jump around. I found it terribly inconvenient, but others found it very convenient. You see – it is fairly possible"* (P14L). When the euphoria about the potential of media of information and communication subsided, it has become evident that we continue adapting to technologies and media in our symbiotic co-existence with information and communication media. The uptake of potentials brought by these media gives impetus to our actions. That is why learners vary according to their preferences regarding information searching

ways. What cannot be missed here, however, is the vital necessity to get to know the media employed in knowledge construction deeper, not just on the operational level.

Writing is another important activity that is undergoing certain changes due to the use of either paper or screen. When asked to analyse how writing changes depending whether paper or a gadget with internet connection is used, one participant shared the following significant insights: „*When I use a computer, I try to find some similar information, sometimes it is really useful, but then you clearly see that hand-writing is no use, you just copy-paste things. On the Internet, it is no longer your writing. And it is really different from what you would have written by hand. [...] Sometimes you encounter words the meaning of which you know but which you yourself would never use. It's just that at that moment it doesn't occur to you to use them. And, for example, it is so easy to think of something when you are using a computer. But if you are writing something creative just on paper... then you have to find some other way. With just the things that you yourself know*" (P3S). This participant sees copy-pasting as ingrained in the use of the Internet. Another important implication here is viewing writing online as more distant in comparison to the close proximity of hand-writing to your inner knowledge. This means that the Internet in a way suggests a way of expression and the content of what is being expressed. However, what is implied here but not stated is that Internet users lack control over the power of the suggestibility of the Internet. Though the participant believes that computer facilitates thinking, in fact, only hand-writing seems to evoke one's true knowing. Thus the symbiotic interaction of an individual and technology becomes evident in what is termed "the external locus" of symbiosis.

Another angle that the external locus can be looked upon is the implications of media on thinking. ***Thinking*** in this research is seen ***in relation to very specific, pragmatic actions*** by learners in their searching for most optimal (in terms of time and effort) solutions to carry out an assignment. For instance, online texts are often fragmentary, with many hyperlinks, illustrations, and sometimes distractions like popping up advertisements, etc. As a result, web users have become accustomed to fragmentary bits of texts providing quick and short answers to their queries. This explains why students often state that the thickness of a book may deter them from engaging in reading it and they opt for an online source because of presumed simplicity of finding an answer. "*Right, I think then [when reading texts in digital formats] the thickness of a book does not scare you. Because you do not see how big it is. It is just in some digital format. You click on it and just start reading. I think... really... if there is any way in engaging young people in reading, it is such a good thing that we have all these technologies, and we can do all of this. And then it is not important at all how you read that book*" (P4S). Not seeing how thick a book is indicates the simplicity of engaging with digital format. This bears important implications for educators: prioritising the very fact of reading over format leads to engaging young people in reading in their new gadgets.

A recurring motif in comments by several research participants indicates becoming increasingly more accustomed and satisfied with ***quick***, ***free*** and ***easy*** search for information: "*I know I should go to the French Institute in the city centre, but there are certain rules, membership fee and other things. You see all of us are accustomed to those cheaper and quicker options. [...] You know you are continuously searching for some information. Well maybe it would also be useful to become member of the Institute*" (P9S). As in the previous excerpt, this excerpt also

implies that physical libraries are seen as second-choice repositories and searching information on the Internet (which is always at hand in one's gadgets) is given preference. However, it has to be noted that learners vary according to their preferences in regard to traditional and new formats of texts. As one participant (who is in her twenties) put it: *"I think I am really quite conservative. I prefer things staying the way they are. Novelties, well.... I accept them. Because it is spontaneous. Life goes on, new things become available and I take them. But, but at the same time I resist [the changes]. I would rather stay with the traditional ways"* (P10S). As it can be inferred from this comment, it is vital to maintain a balanced position regarding young people's preference for newest technologies, and this is particularly important in educational settings. Interestingly, this participant said further on that she feels quite comfortable and concentrated when reading texts in the PDF format just as well because it allows reading things undisturbed in contrast to online texts: *"If I read a PDF document where nothing can distract my attention, it is just like reading a paper book. You just move the mouse while scrolling down, and you are just as concentrated as when reading on paper. Just like reading a paper book. You are concentrated when reading on screen unless those pop-ups distract you. If not, then there is no difference"* (P10S). What seems to be vital for effective reading comprehension then is not the format but rather the ability (and proper conditions) to concentrate.

Another telling specificity of learner's thinking about technologies and media is a belief that anything you need can be found on the Internet. This aspect is also related with the kind of **emotions** and **feelings** a learner experiences: *"Well, sometimes when I cannot find what I need online I get frustrated. [...] Frustrated because if I cannot find it on the Internet, then where else can I find it?"* (P9S). Seeing the Internet as a repository that contains anything you might need narrows one's field of vision and, as it can be seen from this extract, causes negative feelings such as frustration. Despite of that a learner today tends to "align" his or her physical world with the virtual world. This is evident in the comment just quoted. What is more, this is also evident in the distinction that learners make between virtual learning environments (VLEs) (the main purpose of which is first and foremost learning) and social media such which absorb multiple spheres of human life, learning among them. The inclination of a learner to transfer as many activities related to learning and studying to social media as possible reflects the symbiotic relationship that, for instance, Facebook users maintain with this social network. Facebook is seen as "part of your personality" in contrast to formal VLEs: *"Facebook essentially is your second virtual identity. It is not some environment where, well, you just perform some activities. It is a part of you, especially for the young ones. You go there, find a group or a person by one click or two, and ask them a question. It takes a second for your question to reach them. And you know that your contact most probably has his / her mobile device alongside and your message arrives instantly. And you get an answer because all technologies are oriented towards this rapid accessibility. Meanwhile, virtual learning environments are nor attractive. I mean, visually"* (P16T). It seems that no environment can equal Facebook because Facebook is seen by users as something very close, well-known, efficient, reliable, always available and offering help while formal VLEs are too formal, cold, lacking visual expressiveness and, if free software is used, lagging behind technological sophistication.

The above discussed features of social media are discussed here in the context of emotions / feelings experienced by learners because of one particular feature referred to by the

research participants: the proximity of, for instance, Facebook to personal life, i.e. a very close symbiotic relationship with what its user sees as "part of one's identity". The identity issue has already been discussed in the section about the internal locus of symbiosis; however, it is also raised here because it shapes actions of a learner and his or her decision making in solving particular problems: *"You have Facebook or WhatsApp close at hand. In your mobile. You use it in your daily life non-stop"* (P19T). This point will be also elaborated in more detail when discussing the changing perception of educational institution later in this thesis, but it is also relevant in the context of symbiosis as it evidences the need for the learner to feel connection to one's learning environment. At the same time, it is just as equally important for a learner to be connected to one's informal circle of acquaintances. What is more, this need is rarely analysed more in-depth. When asked to think about why Facebook is constantly being consulted for almost any question that arises, one research participant responded in the following way: *"You want to know why? I myself would like to know the answer to this question. I am... I would like to think that I am against using Facebook. But Facebook... You have to know how to use it... Because it shows everything that your friends share, like or post"* (P11S). As a matter of fact, study-related materials are readily uploaded and any arising problem instantly solved because of omnipresent proximity of social media in a learner's life: *"Why we upload everything in Facebook? Because you just know that you will be there anyway. So it's better when all information you need is stored there. You always have it there. You can open it anytime"* (P4S). Thus this particular social network is seen is a collectively filled repository constantly accumulating all necessary information: *"It is just... that you upload to Facebook all materials you get in Moodle. And also what you don't get in Moodle: any pages that you had to copy. Somebody scans them and uploads them to Facebook. So you see – you have everything in one place"* (P4S). Another participant accounts for her use of Facebook in a similar vein listing even more advantages offered by this social network and listing a wider spectrum of activities: *"All of us do everything in Facebook. Of course you can also use Gmail. Many students say – I need Facebook to know all information that my groupmates share. We also have our group with our files and merely this thing already makes it really comfortable. But also there are people with whom... how shall I put it.... it is much more comfortable to communicate in Facebook rather than, for example, Gmail. In Gmail you can communicate and share information, of course, but not all ... not all of us want to communicate in Gmail. As there are so many of us in Facebook, it is really comfortable. And then there are also relatives, friends, former schoolmates and it is so easy to find all of them there. Besides, for me a huge advantage of Facebook is having there people that I can follow, people who read good literature, who are interested in politics, whose opinion matters, I can follow news that they share and I can see their recommendations of movies or books. I can see what a person whose opinion is like mine is reading. I like them so most probably I will like the book of the movie that they like. Or some event that they recommend in Facebook"* (P10S). What is evident from these excerpts is that students prefer storing their study materials in digital formats online: proximity of knowledge repository and easy accessibility to it is one of the key needs of a student. These excerpts are also significant for two more implications, i.e. (i) indication of how informal, entertainment or leisure activities are merging with studying and learning, and (ii) how we tend to be encaged within the

interests and like-minded opinions of our contacts thus narrowing our scope of vision, but these veins will be discussed in more detail later.

Modus operandi

From the processual perspective, i.e. that of *modus operandi*, symbiosis is an ongoing process of adjusting to the digital habitat. This process is a multi-faceted phenomenon occurring in three ways: sometimes it occurs **naturally** (when it goes unperceived, occurs spontaneously and is not subjected to conscious and directed control by the learner), in a '**negotiated**' way (when it is managed and manageable because of the deepening awareness about the nature, use and impact of media on human existence and its specific spheres such as learning) and in a **directed** manner (when it is more or less fully perceived and managed depending on the increasing literacy level and awareness). Thus modus operandi implies symbiosis as a process occurring in the adoption of the digital habitat. The three ways of modus operandi are not distinct independent processes; rather they should be seen as a continuum with very flexible boundaries. Awareness about the role of media is achieved through education about mediated knowledge construction. Due to media literacy education, a learner can explain how, why, when and for what purpose he or she employs media. Consequently, this awareness then is reflected in learner's daily practices and increasing capability and empowerment to manage mediated environment.

Modus operandi: natural

What is most specific of the natural modus operandi is the premise that learning occurs naturally in any activity that a person engages in: *"Indeed a person always learns something naturally in anything that he does"* (P2F). Importantly, when talking about media, "naturally" may imply "in a mechanistic manner": *"It seems to me that when you are doing something with a computer, you do it in this... mechanistic sort of way. You want to write things quicker, maybe even you think less, because you think 'Who cares, whatever I write is fine'"* (P4S). This comment implies significant things. Human-media symbiosis is a dual interaction: a machine affects human actions just like a human being is able to manage the machine. What is crucial in educational settings then is bearing in mind that we have to know the media better so that we acquire more capacity to manage our actions.

The most extreme position about how natural the digital realm has become is reflected in the statement: *„There isn't any physical space anymore"*(P5T). Though it may seem too categorical, in fact this viewpoint implies that the digital space and the Internet have become so **ingrained** in daily activities that it is almost impossible to function only in the physical space no matter how a person would want it. A part of being media literate concerns awareness about security measures, protecting personal data and information, safe use of social media, safe search on the Internet, etc. When media pervade entire activities they are taken as simply natural unquestioningly. Therefore, it is important to raise questions about safe use of media. However, a balanced approach is suggested by one of the research participants regarding exaggerated fears of sensitivity of personal data in the virtual space: *"Privacy infringements. Well, I would like to ask you this question: what changes if indeed some of your personal data is visible to others online? You are just as easily visible in*

the physical space. People see you every day in the university cafeteria, the food you eat, the way you dress, where you go. People can even find out where you live. So how is the virtual space different from this? Do your habits change? There are laws – you have to know that there is regulation, prohibitions to do one or another thing. I see no point in being too worried about a possibility that sometimes somebody may in fact break into your email account or similar. It is prohibited by law, by the Constitution. Your correspondence cannot be intercepted in the physical space. I see no point in worrying over the virtual space either. On the contrary, I would say that there are more risks in the physical space now than the virtual. Technically, it is much easier to intercept your physical mail box contents than electronic"* (P5T). This comment is very important for understanding what being media literate implies: media should not be feared, but rather we should teach and learn about them as much as we can in order to be able to manage efficiently the information flows that concern us and our activities.

Another indication of how we are adopting the digital virtual habitat is evidenced by the **constant presence** of media in our proximity: *"Well, I'd say it [Facebook] is almost constantly there in the background. I mean, if I am working with my computer, it is just there, in the background"* (P10S). One participant, a second-year student, expressed her viewpoint regarding natural preferences of today's students in contrast to the position of some of her teachers: *"They often kind of reproach us, 'How is it possible that you do not go to the library to read books? Why do you always want things to be done in the quickest, easiest, simplest way?' I wonder how one can think so. Why not? Why not easier, quicker, simpler? Why do we have to do things in a more difficult way? Why do they want us to live the way people lived in the past? What's the point? Life is short"*. (P11S). The implied meaning here concerns some generational differences regarding preferences for the ways of studying and learning. The digital virtual environment seems to be taken as quite natural by people of various generations. What is significant, however, in this latter comment is that learners are adopting the virtual habitat in a very natural way for them that has to be taken into consideration in educational settings.

Another aspect of the natural modus operandi concerns the **perception of time** that the human-media symbiosis has brought. Assumingly, in addition to the changed perception of time, this symbiosis has caused the merging of leisure and learning (or work), the second dimension of the axial category MORPHING that will be described in more detail in Section 3.1.2. *"To me, Lithuania is like a small village, the tempo here is not like that in those cities of Berlin, Paris, New York... though I have never been to New York... But still, everyone here is enacting the pace of life much quicker than it really is. But, of course, the tempo of life here is quick enough, no doubts. And because of that you start thinking 'Well, if I continue sitting and listening just like that, I will be somehow wasting my time'. Though, in fact... I can understand students who do something else at the same time while attending a lecture, for example, reading a text-book. But think about others who are immersed in Facebook or something like that. I remember when some of my students made a mistake of inviting me to join their group in Facebook. And then they posted this post: 'Us in the philosophy seminar' [laughing]. I couldn't help laughing when I saw this. They deleted this post immediately. They apologised and apologised... [laughing]. But in fact they were brilliant students. They studied a lot. They were very smart. I did not get insulted in the slightest. I was amused. There was no need to apologise, because I was satisfied with their performance in the course. But at that moment during the lecture I could not understand why they got*

distracted and why they were laughing. Well you see. I think it is because if you sit just like that just listening, you start thinking that you are wasting time. And then you feel the urge to open your email, Facebook and so on. I myself do it. I go by bus to work or from work, I always feel the urge to open my Gmail account, to read news or something like that" (P14L). This quotation is important in its telling implications. Firstly, it shows that the human-media symbiosis brought such an acceleration to our lives that is not subject to our time management ('time management' here is understood as those learned techniques and controlled efforts to allot wisely the time available to us on a daily basis). Rather, this acceleration is seen as a natural consequence of the symbiosis that we have assumed spontaneously as a benefit. Therefore, the research participant just quoted refers to the spontaneous immersion into an assumed tempo of life. What is more, the spontaneous immersion into this assumed tempo, in its own turn, has resulted in the symbiosis leading to merging of entertainment and learning / work-related activities.

Modus operandi: negotiated

The negotiated modus operandi is an interim modus between the natural and directed modi of the human-media symbiosis. At this point it has to be noted that media literacy and media education are the means to strengthen the negotiated and the directed modi in order to enable a learner to become the one who manages his or her use of media according to his or her needs in most efficient ways, while media are starting to be seen as **aiding in coping** with our daily assignments and challenges.

When asked to compare her experience of reading on screen and on paper, one research participant accounted for it in the following way: *"I am a little bit old-fashioned in this sense. I admire both the rustling of the pages and the smell of paper, and all that ideal image of sitting there reading in the evening in autumn or winter or on a sunny day. I simply see it as relaxation. While... reading, reading online and on computer screen tires me, indeed. My eyes start soring, I start feeling exhausted psychologically. Because for me it simply means learning"* (P9S). This research participant here refers to the strain caused by media because of getting tired of exposure to media. Paper book reading is being idealized and romanticized while reading on screen causes tiredness of both the eyes and the mind for this participant. In addition, the participant relates reading on screen to studying and learning activities, not relaxation. But as it has already been evidenced by the data from other research participants, users are 'negotiating' their co-existence with media in varying ways. Some of them state that they do not see any difference between both modes of reading. Thus, this interim and ambiguous aspect of human-media symbiosis is explained here as interim and 'negotiated', i.e. learners are trying to cope with the ubiquity of media in varying ways.

Contemporary media have brought another problematic issue that learners have to cope with – the abundance of information. Those learners who have good skills of managing information flows and selecting quality sources are coping with the abundance of information in a skilful, or 'directed' way – the issue described in the following section. Most learners, however, operate on a rather basic – operational – level as regards capability of managing media and knowing them more in-depth. The data in this research shows that an average student is very skilled at the operational level, but is struggling with such problems as over-abundance of low-quality information available on the Internet. Presumably, the

tiredness caused by constant exposure to various gadgets is also related to the overabundance of information, or, to be more exact, to the inability or failure to cope efficiently with the superfluous possibilities offered by media.

As regards the negotiated modus operandi, which, as it has been defined in the introduction to this section above, is an ***interim*** stage, the particular moment when a student starts to think about the causes behind emotions experienced due to exposure to media and overabundance of information is manifest in comments as the following: *"I get hysterical. Furious. I do not know how to cope with it then. Then I try to stop searching and get whatever I can from a text at hand. But if I give up here as well, then I start looking for yet another thing – something even shorter. I often find just too much of it all. Often, it is possible to say things in a few sentences. But people write and write. The same thing all over again. So many things are repeated"* (P10S). The availability of "too much of it all" may explain the preference of learners for shorter texts and fragmentary communication, for example, tweets or social media posts or 15-minute-long "lectures", etc. Thus human-media symbiosis explains how media in their own turn shape our preferences, modes of communication and fragmentary knowledge construction.

The negotiated modus operandi not only implies becoming conscious about the nature of media and their impacts on our lives but also means becoming aware of the necessity of ***assuming responsibility*** for one's actions contributing to the overabundance of information. As one young university teacher put it, *"When I am writing an introduction to my paper. I sometimes manage to write only a line of my text and then delete two lines of what was already written. Because I know that I am responsible for every word I write. Young people rarely think about that. And... it would probably be too categorical to state that it is a generational feature. But social networks undoubtedly have contributed to it. Because all these words – they escape your thoughts so easily. You expressed your opinion, you commented on something. And today everyone's opinion matters. And when I criticize my students for states unsubstantiated by facts or sources, they sometimes get insulted: 'I found it in Google' or 'It's from Wikipedia'. And then I respond, 'OK. But have you cross-checked that information in several sources before making this state?"* (P16T). Raising doubts, making students think about the implications of the overabundance, easy accessibility to information online, the need to know media better is a vital step in becoming a more conscious and responsible user of media of information and communication.

The intermediary position of the negotiated modus operandi on the modus operandi continuum is evidenced by different attitudes of students towards their participation in lectures and seminars. The following comment is from an interview of a student who was putting much effort into managing her use of technologies and media during lectures and at home. This participant held a very critical opinion regarding her groupmates who were constantly using their mobiles during lectures. Interestingly, when asked whether she was talking about some boring lectures, she stressed that this did not affect in any way how some of her observed groupmates behaved. It would have been the same in both interesting and boring lectures: *"There are people in my group who just sit during lectures and don't listen to professors. One of our teachers once complained about her students in the other group. She said they did not join the discussions, only several of her students were active, while others "lurking" in their*

mobiles. I would justify it if they were reading something interesting or useful. But they just sit or... how shall I put it... scroll. And I see what they are doing during lectures. They don't listen. I don't understand why then they go to lectures if they don't hear anything" (P10S). One more significant observation can be made pertaining to this quote. In the previous section, another participant, a professor of philosophy, was quoted who told about her experience with students using social media during her lectures. Both participants distinguish between the supposedly useless distraction such as following updates in one's social media and justified distraction such as reading something serious like a book. This can also evidence how entertainment and learning are merging – an issue that will be discussed in more detail in Section 3.1.2. Such links between properties and dimensions of the axial categories MORPHING and ANCHORING show how deep the human-media symbiosis is.

An individual becomes a more conscious user of media and technologies with the ***deepening knowledge*** about them. As it has already been pointed out, the modus operandi is a kind of a continuum where a media literate individual gradually acquires power over mediatisation. As one participant put it, *"Technologies are nothing just on their own, without a human being. At least this is what I think. Another thing is when a person gives up all his power to technologies, when he or she becomes a slave of technologies. [...] When technologies are deified, when we start thinking that the end of the world would come if the Internet disappeared [laughing]. Well, of course, I am exaggerating a bit, I understand very well that the Internet for many people has become the main means of work. But... I myself have noticed moments when I become enslaved in a sense... Or my brother. When he travels to some place and reaches his destination, the very second he arrives he connects to Facebook. It seems as if life in half an hour has changed somehow. I think it is insane. We have to maintain a healthy relationship with these technologies somehow"* (P14L). The significance of this viewpoint lies in stressing the powers of a human being: comprehending media and their impact on our behaviour leads to empowerment. Symbiosis is evident here in how media stand in-between inner and outer life of an individual.

Modus operandi: directed

The directed modus operandi refers to ***conscious efforts*** of a learner to know media better and to modify one's accustomed ways of using media in such a way that would make his or her use of media and encounters with problems faced in the virtual space most efficient. The complexity of comprehending well the changes that have occurred in our lives with the advent contemporary media is well reflected in the following excerpt from an interview with a university teacher: *"No doubts, important changes are occurring. I see them very similar to the changes that occurred when the humanity moved from the oral tradition to print. All these digital activities... it is an entirely new stage: a stage that started in a very different way, in fact. And what happened – we are trying to retain the remnants of this old formal teaching. But we are trying to change when we are orienting towards the learner needs in a formal education institution. We wouldn't change probably, but we were forced to because what learners do outside the formal setting is much more meaningful for them. And look at the entire palette of activities, people, motives and ways, just all that space – we have to understand it because we have to see where we have come. In short, the opening digital class – we would be able to*

understand what it is better if we tried to comprehend the activities that learners engage in. But we know so little – networking, social media, all that online space – it is the galaxy of the unknown" (P2F). The challenge of "getting to know the entire palette" to understand the lived reality better is a complicated one. This palette has to be filled with knowledge about "activities, people, motives and ways".

The proximity of the Internet in the classroom has modified the ***distribution of powers*** in the communication of students and their teachers. "*Technologies provide us with access to information. Therefore, we can engage more efficiently and rapidly in, for instance, argumentative discussion even during lectures or seminars. Building the authority of a teacher in front of the students due to the knowledge that the teacher demonstrates is no longer common. Students can cross-check an idea expressed by the teacher instantly. They can instantly search for opposing viewpoints on the Internet. And if a teacher's pose implies his being 100 per cent self-confident and he imposes his viewpoint as one that cannot be challenged, students can very easily come up with opposing information, or criticizing information. That is why a teacher has to think well before saying anything and not to present his viewpoint as 100 per cent true. Because now our students are indeed much more agile, they quickly search and find things. Therefore, a teacher now has to act as a kind of mediator managing information flows and challenging differing viewpoints. Because, most probably, his competencies are at least slightly if not much better in a certain field. Sometimes he should even admit that he lacks knowledge to answer one or another question. Then all have to connect to the Internet and to make use of what technologies offer. That is why we want computers, multimedia, etc. in our classrooms. Because now we have to put all our effort into cross-checking information as much as possible in order to access the real and reliable knowledge, and not only what a teacher has to tell*" (P5T). This excerpt is very rich in its implications regarding the state-of-the-art in current educational settings and the ways the actors in these settings – teachers and their students – negotiate and direct their modus operandi. Firstly, it has to be noted that, due to proximity and ubiquity of the Internet, students can challenge a teacher's authority by going online and consulting whatever source they encounter there at the moment. Paradoxically, technologies and media both interfere with and facilitate independent human thinking. For each individual, they will offer different search results depending on the search engine being used and, for instance, previous search history. This bears significant implications regarding the powers we confer to commercial companies in constructing our worldviews but this aspect will be discussed in more detail in subsequent chapters. Meanwhile, the second important implication concerns a teacher's position. Probably never before has a teacher's position been that similar to a student's position regarding knowledge transfer directions. ***Co-construction of knowledge*** has been present in various guises throughout history of humanity; however, never before the advent of the new media of communication has it been imposed by machines and their principles of functioning. The human-media symbiosis is most evident at this point. However, media literacy achieved through media education enables a learner (both a teacher and a student in that case) to comprehend the impact of media and, consequently, to acquire balance.

Conversely, media have offered solutions to certain academic problems related to ***authorship*** issues. "*E-space offers one great advantage. It used to be easy to steal people's ideas*

in the past. Now you first publish your ideas, your writings, you can constantly add new ideas, publish them in official websites, for example, a university website or open access websites. If you see at some moment that somebody is trying to appropriate your ideas, you can easily prove your authorship. In the past they would ask you: did you publish it? Where did you publish it? And you had to provide a physical source that published your work. If there were no such source because you just did not publish it or you just worked at home or you shared your ideas in some conferences, informal seminars, and somebody took your idea and developed it further and in that sense made use of your material. Nowadays, the openness of the Internet has brought this advantage: you published something matter-of-factly, and if somebody makes use of it, you can always prove when and where you talked about it. In this case, I think, the dispersal and the accessibility is a benefit for all of us" (P5T). Virtual space is not very different from (and presumably quite similar to) physical space: it is important to comprehend how to manage both. As the participant in this quotation states, e-space has brought considerable advantages and has eased the process of managing one's intellectual property rights. Knowing well the e-space, its functioning principles, raising awareness about benefits and dangers of e-space and teaching about responsible behaviour online are some of the aspects that are considered important in media education. For researchers in particular, the e-space provides facilitation of managing one's work output. Thus, in the context of higher education, media education encompasses all actors: teachers, learners, managers, administrators, etc.

3.1.2. Merging entertainment and learning

The proximity of gadgets and the constant availability of connection to the Internet have brought the merging of numerous daily activities such as what used to be related with leisure and what used to be related with work or learning and what was more or less seen as separate spheres of human life. The dimension of merging entertainment and learning has been defined as encompassing two properties: (i) *engaging in learning* and (ii) *maintaining attention and overcoming boredom and laziness* (Figure 2).
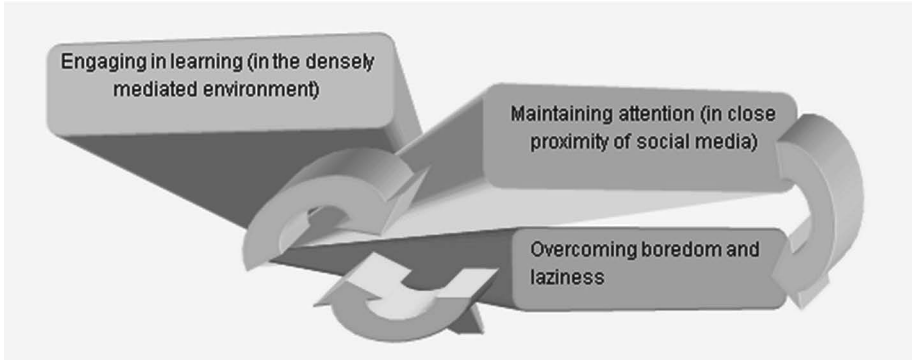

Figure 2. *Merging entertainment and learning (drawn by the author)*

Engaging in learning

'Engaging in learning' is a multi-faceted process that involves both directed activities and spontaneous, unperceived, seemingly learning-unrelated activities through which some learning (which may be referred to as essentially informal) may occur: *"Because informal learning can occur at any time. On the other hand, maybe not always a person who is doing something in the digital environment thinks of learning taking place at that moment. Well, look at Facebook. I doubt very much whether my students would consider their activities there as some learning if I asked them"* (P2F). The ubiquity of media has **blurred the boundaries of where and when learning occurs**. Seemingly, much of it goes on unperceived in, for instance, social media where entertainment and learning are merging and learning goes on unperceived because of engaging in multiple interesting for a learner activities.

Therefore, the principles of social networking have to be taken into consideration in order to comprehend how learning occurs today. *"I am convinced that social networks... though people do not think they learn while they use them... while they use them as pastime... and there a person... well... maybe relaxes. Because my students... once they told me this: they do not want to post what they think in the forum of the formal VLE of the university because other people in the course will see it. And I thought: but you post it all in Facebook where everyone can see your posts, but here, where we are directly concerned with formal education, expressing your personal viewpoint is somehow seen disturbing. Though I only asked them to tell us what they think about the studied issues. Opinion is opinion: it is neither right nor wrong. It cannot be criticised. But you see: people do not want it, somehow... They told me: we can post it as a comment to you but we wouldn't like to post it for the whole group to see..."* (P2F). Formal education institution is seen by a learner as too separated from subjective and close world of his or her daily activities. Meanwhile, social networks are seen by learners as the space encompassing all meaningful spheres of their life: *"This is why so many of us use Facebook: it is part of your pastime but you can communicate instantaneously with your friends who are at the same time learning what you are learning"* (P3S). Importantly, learners prefer particularly Facebook (where their leisure and learning are merging) to formal educational VLEs that are seen as too distant because of detachment from other daily activities that are not necessarily related with learning in its traditional sense.

What is more, learning becomes engaging when it is **lively** and **empowering**. Similarly, reading a fiction work such as a novel gives impetus to and fosters one's imagination: *"You see when you are reading a novel, images start appearing in front of your eyes. It wakes your imagination and nurtures your imagination. And you become director of your own film. You... can imagine things so easily... because it is not a dry, difficult text"* (P11S). 'Becoming a director of your own film' reflects the essence of the preferences of a learner. Engaging in learning is a very complicated process: the boundaries of when and where learning occurs have become undefined. What is more, much of learning goes on unperceived as one of the research participants pointed one of the previous excerpts in this chapter. The element of entertainment and the merging of entertaining activities with learning-related activities through the constant exposure to media (and social media in particular) have radically changed learning modes.

Thus, teachers often feel responsibility (or are encouraged to assume much of it) for engaging their students in learning. The teacher quoted in the following excerpt has adopted a very clearly defined strategy for engaging his students in learning: he makes use of his **capacity to demand the use of the formal institutional VLE**. Institution in this case can be seen as possessing the power to determine the communication mode in the process of teaching and learning. This teacher thus substantiates his position further on in the interview: *"When I meet my students for the first time, I begin with explaining that they have to possess certain literacy level, both computer literacy and "study" literacy. I introduce them to the VLE and explain how it works, answer questions individually. Well, I just follow the study principles adopted in our university. A student signs an agreement with the university that sets certain duties. One of the duties is using the institutional VLE. The same applies for teachers. I do not see any problems here. We cannot attend to every minor need. Of course, a good teacher attends to his or her students' personal needs. But I am talking about something else here. I am talking about self-discipline and commitment from a student to take up a responsible attitude towards studies. A student has to see that it is necessary, that it [the VLE] is a convenient space for working with course information"* (P5T). In other words, joining an institution as its member means assuming responsibility for the type of communication that corresponds to institutional principles and that assumingly is best in that particular setting. In addition, this is also related to realizing that studying requires many conscious efforts and very focused work – an issue that will be dealt with in more detail further on.

Maintaining attention and overcoming laziness and boredom

The role of the traditional paper book and the traditional linear prolonged reading is continuing to raise problematic issues in educational settings. **Perceptions of what reading is** are also changing. There can be at least two explanations offered for this. Firstly, we are still searching for the ways to cope with the informational abundance. Secondly, the significance of the element of "entertainment" in education can no longer be deprecated or ignored. *"I doubt if all those numerous books that we are recommended to read – read this and this, and then this and this – are really necessary. You cannot manage it all. I think the best thing is recommending just some books as obligatory reading and all the rest depending on your preferences. If you want to get deeper, you may read more. But I think we should all together decide on how much obligatory reading we can do. Sometimes teachers tell us to read those books that we cannot really cope with: they are so boring, you cannot even concentrate. What is the point in reading when you cannot enjoy it? It is so tiresome"* (P11S). Interestingly, this interviewee is a very well-read and diligent student: so in this case it is not a question of how much effort a student is eager to put into studies. Rather, what is important here is seeking enjoyment from the activities that one is engaged in. Just like the pleasant, engaging and diverse activities in social networks, reading of study materials is seen as an activity that should bring enjoyment. Thus, a learner seems to be searching for balance between reading and entertainment.

The double nature of media – the **parallel use** for work and entertainment – has to be taken into account in educational settings. Grown-up learners at the tertiary level of educa-

tion continue using media in the way they were used to while growing up. *"Technologies are used according to purpose, really. But I think we should not be that categorical and say that their use should be strictly differentiated. You shouldn't forget that technologies are used for relaxation. They are everything: games, not only professional information. They are entertaining information, various video clips, films, music. This is the advantage brought by technologies. And I think students enter universities more accustomed namely to this advantage – the advantage of entertainment. Because they have never needed technologies just for professional use. So they have to be taught about using technologies for professional use"* (P11S). Thus, the merging of leisure activities and learning activities is seen as an advantage. Therefore, extensive searching for work or study related information and extensive reading are related with the feeling of boredom. *"You see, hard work can be boring. When you want entertainment you can get lost in it and lose sense of time passing. You're engaged in it and you can go on like this for hours. The other day I was looking for a bike. You know I spent three hours without noticing it. I kept reading about the specifications and parts. And, on the contrary, when studying, you just manage reading the introduction and then you get bored and lack interest and engagement. Like feeling sleepy. And learners today (and even mature adults of over 30, for example) they skip it. Because it's too much work. You see? There is more and more information and you can access it easily, but the factor "interesting versus not interesting" is always with you. Research work requires diligence. Very precise... if you want to do it well. And it is irritating. And I don't think contemporary learner wants to get involved in this kind of irritation. Suffering is not valued. You have to work, earn money and gain respect. Why make your life difficult? You want things as easy as they can be. And this is living on surface..."* (P16T). The light-heartedness and entertaining space of social networks is winning over the presumed rigidity of formal educational space. Therefore, educational institutions have been forced to search for alternative ways of engaging learners.

The challenge of overcoming learners' boredom is mostly taken up by teachers, not by learners. In today's technology and media saturated learning space, teachers feel ***pressure*** to put all their effort into making their lectures or seminars as lively and multimodal as possible. The immediacy of the teacher and audience is not direct in many cases. Teachers put much effort into delimiting clearly the learning space and the informal space of the virtual world, for example that of social media. *"I think everything depends on your agreement with your students to resort to the use of only your formal VLE. We have to separate the learning process, that is, what students do with their teacher, and what they do among themselves. Among themselves they can do whatever they like, share whatever they like. But I always stress: we have agreed in our first seminar to use the obligatory material of our course that is uploaded in Moodle. Every student has to connect to it to get access to the information and to receive individual assignments. Equally, every student has to upload their finished assignments in Moodle. I do not communicate with my students by email. Everything they need for my course is in Moodle. I think we as teachers have the right to demand the use of the platform that is aimed at learning and nothing else"* (P5T). Despite of the often heard states that formal institutional VLEs are too boring, formal, and lacking multimodality and liveliness, it does not seem to be a major obstacle in setting clearly defined limits between learning-only space and other spaces of personal life. The same interviewee that

has been quoted in the previous excerpt states to prefer the new, multimodal formats of presenting and studying information. *"Look at what gets most attention on the Internet. That is why traditional media like television move into the internet, upload short report of several minutes and prefer visual presentation to textual: because I myself would not read long texts, I would not read a 5-page-long textual report. And a short video can be watched quickly by forwarding and skipping things that do not interest me. The same happens in the learning process: we want the possibility to skip and forward and start at the point that interests us"* (P5T 'hey, this is boring, switch it off'). This interviewee refers to this attitude as "hey, this is boring, switch it off" attitude or learning by "I know this, forward it on, that's it". Thus teachers have to think a lot about the modes of presenting their materials and, most importantly, how to make sense of all the bits of information that learners are exposed to in the course of learning by building a unified sense-making whole explaining the studied topics more in-depth.

Media have complicated the educational reality when they have starting ***changing the traditional ways of knowledge construction***, for example, by intensive reading of lengthy texts. Re-thinking this impact can help in understanding the behaviour and preferences of today's learners. The light-heartedness of viewpoint towards the world and the multimodal media through which learners get to know the world are causing certain tensions between teachers' preferring more traditional ways of knowledge construction and seemingly too-relaxed attitudes of learners and their mediated learning spaces that are often related with multiple distractions hindering learning. However, educationalists have to take into account the changing lived world of the learner and how much the world has changed in just a matter of thirty years. *"We, the educators, often follow our long-established vein of thinking believing that reading of long extensive texts is a value. But the learner will have to live in such a world where he or she will have to orient themselves rapidly, to access quickly the needed information, to comprehend it and to make decisions and extract the essence. So they need different things than the ones we had to learn. And there is also this conception of us, the older generation, that becoming an intellectual thinker means bearing this painful expression on your face"* (P23M). Thus today a learner has to be able to cope with the fragmentary nature of knowledge construction due to indefiniteness of the learning space and learning as a process.

3.1.3. Granularity

The third dimension of the axial category MORPHING is referred to in this research as "granularity". Granularity implies a very complicated, diverse and immense world of multimodal information and fragmentary modes of knowledge construction in heavily technologized educational settings and mediated environment. This dimension has four inherent and inter-related properties: (i) ***fragmentary*** building of knowledge because of increasing multimodality of information, (ii) learners' attitudes and practices related with how deep they are ready to dig until ***primary***, ***original*** sources, (iii) opting for a particular ***communication mode*** (face-to-face or online), and (iv) opting for a particular ***reading mode*** (screen or paper, physical or digital media of accessing information) (Figure 3).
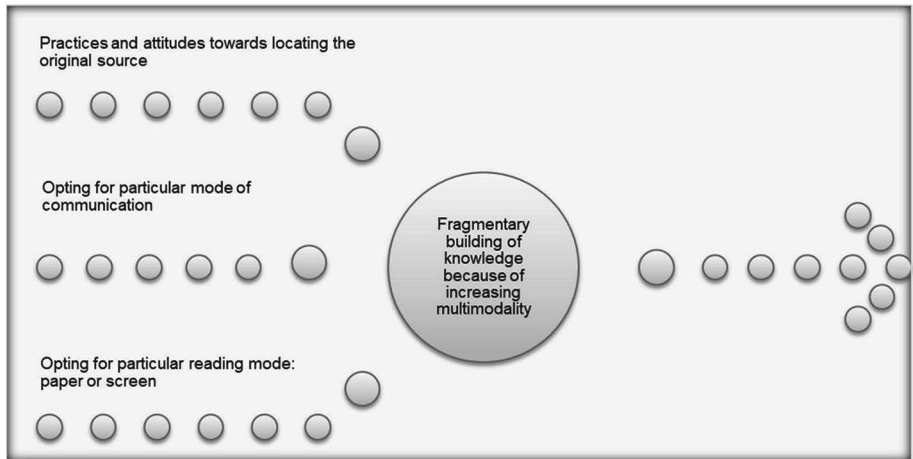
Figure 3. *Granularity (drawn by the author)*

Fragmentary building of knowledge and the increasing multimodality of available information

The indefiniteness of the learning process today is reflected in how **learning the unexpected** content may occur. *"The ways students gain knowledge today are transforming as well... how they learn... and the very process of studying... In the past, learning was more linear when a person just read one book, then another book. And now it is more fragmentary: a person may be studying one thing and then suddenly he clicks on a hyperlink, he finds himself somewhere else, then another link, and yet another one... And what occurs sometimes – he learns something that his teacher did not expect at all... he simply directs his knowledge in the way that suits him best"* (P1ET). Fragmentary construction of knowledge has naturally become part of the formal and directed institutional educational process. Importantly, it has been assumed by the learner eagerly and spontaneously as a natural mode of constructing one's knowledge due to the ubiquity of media and the Internet connection. The educational institution and the teacher have had to adapt to this. That is why so many debates have arisen regarding the future of the educational institution, the unsubstantiated fears about teachers' losing their authority due to the loss of their image as a reliable source of knowledge, the presumed concerns about people reading less and the future envisioned as humans turning into passive users of media. Losing control over the once successfully governed processes has always caused fears for institutions. However, after almost thirty years of increasingly extensive exposure and use of media and living in a densely mediated world, it is possible to talk about the changed modes of knowledge construction, institutions adapting to these changes and teachers adopting other roles in the learning process. These implications will be discussed in more detail in the following chapters. For now, however, it suffices to bear in mind only that much of the learning process – governed (institutional) and spontaneous (occurring naturally, often without realizing it) – has become essentially fragmentary because of the ubiquity of the Internet and the increasing multimodality of information.

Granularity and fragmentary nature of knowledge construction raise a question about what knowledge is. Looking from a very ***pragmatic*** perspective, it seems relevant to believe that knowledge is what learner himself / herself sees as knowledge that they need. *"Well, maybe, they cannot retain their attention for a lengthy period of time, but they are being exposed to a much larger quantity of information than before, when they were exposed to small amount of information and they could retain their attention longer. So they now do not get that much directed and pre-defined knowledge, but they are gaining more undefined knowledge than purposive knowledge. What is the point in filling the brain capacity fully with knowledge brought to you by your teacher? Now you yourself can shape your knowledge..."* (P1ET). The proximity of gadgets have made us think that whatever me may need ***at this particular moment*** can be found there, on line. This has brought a certain feeling of security. The state of psychological well-being regarding the possibility to find quickly whatever you may need at a particular moment is very important for a learner today. Nobody enjoys feeling at a loss. However, this is being enjoyed at the expense of the quality of information that is available instantly and that is needed quickly.

Fragmentary knowledge construction has multiple implications. One of these implications concerns the assumptions of the research participants regarding the relationship between multimodality of information, imagination, and memory. *"I think that an image restrains your imagination in a way because it shows you instantaneously how, for instance, a character looks like. And this shapes your opinion about their actions. You don't have to try to imagine something else. And when it is just written text, you are left with your own interpretation and you imagine what a character looks like. I prefer imagining myself what a character looks like, but others might like visual representation more"* (P3S). This comment evidences our multiple preferences regarding ***modes of information*** that we are exposed to. More often than not, learners would state that visual representations aid in memorisation and are much more engaging. *"Images help to memorise information, at least for me... When you remember that particular image you may better recall everything else that was around it or at least something... It aids in memorising. It stays in your memory"* (P4S). What is clear from these two latter excerpts is that an image may (i) restrain your imagination or, vice versa, aid in drawing a mental picture of some character, for instance, by suggesting an already constructed image and (ii) aid in recalling the information that one was previously exposed to. This is not to say, however, that visualization bears either positive or negative implications for different learners; rather it is important to bear in mind that mediated representations of the world have to be analysed because of their impact on our worldview and knowledge construction. With media, we are exposed to more visual representations rather than purely textual. For educationalists, it is essential to understand that learners differ considerably in their preferences for one or another modality of information, and that an assumption that it is always the newest technologies that learners rush to delve into is to be taken with careful consideration. Technological determinism has to be considered just as in-depth as the human factor in any situation, more even so in education.

Fragmentary knowledge construction is also reflected in the tendency of students to refer first and foremost to whatever ***online sources*** are available on their gadgets rather consulting the physical library resources such as traditional print books. *"Usually we rarely*

refer to paper books because we search paper books only if we do not find the information online" (P9S). Searching information online tends to be rather fragmentary, little predictable, and involving quick skimming of texts unless some learned and skilfully mastered information strategy is adopted and systematically used. Otherwise, information is being searched rather spontaneously, or, to be more exact, impulsively at least for orienting in the first place as regards texts available on a given topic. However, research participants see this initial searching for the needed information as sufficient and meeting their needs fully. *"I find it all on the Internet. I can read those books online"* (P10S). Evidently, accessing much information on one's gadget is seen as an advantage and preference. Searching for paper books (and then reading them) can be seen as too time consuming. *"I sometimes go for a paper book but if I see that I am completely short of time I opt for an audio version. It is really convenient... if you can concentrate and listen attentively... If not, then you just don't hear the other half of the book"* (P11S). Paper books are not excluded as sources but once again the information in the virtual space seems to be more quickly accessible. Besides, a format other than the traditional print text evokes the fragmentary mode of constructing one's knowledge. The same interviewee later in the interview admits that she sees linear reading of a simple text easier, but multimodal representation, for example, in short video formats, is more engaging: *"I find reading a linear text easier. Of course, if there are short videos available, it is always interesting to watch them, they are easily available on YouTube. But if I am reading some scientific text on the Internet and it is full of hyperlinks, I instantly leave such a page and don't read it. Because it is terribly tiresome, you are burdened with all that information, you get lost in where you are and what you are reading, then you do not know how to go back, how to put it all into one piece. Of course, if a person knows how to manage all that information, if a person can find everything quickly, to arrange it all in their thoughts, then it's great. But I get too tired in such a situation"* (P11S). This participant states to prefer linear text because of its simplicity and calmness that this simplicity brings. But this excerpt reflects what seems to be a very specific characteristic of the learner's encounter with multimodal Internet texts, i.e. discarding certain digital texts because of one's emotions experienced at the moment of the encounter. Another interviewee shared a similar point of view: *"Yeah, usually you have all the information there [on the Internet]. But you use this kind of... You see all these hyperlinks, lots of hyperlinks. You see the title and then you click and go to another webpage and then at the end of the day you are like... a bit lost. You don't know [laughing] where you are exactly. But sometimes you may be lucky and find information you are looking for. But I always have... I don't know... like I said... eight windows open. Because I click trying to go to... my place where I go. But I never read from top to bottom. Never. I usually get tired and just read two or three lines and I realise it's not something useful for me"* (P18S). Searching for information with **multiple windows open** seems to contribute to increasingly fragmentary searching for information as well. Besides, this fragmentation is again related with certain emotions experienced by the learner. On the contrary to the previous excerpt, however, this latter excerpt shows that some learners embark on clicking hyperlinks eagerly and spontaneously. But both interviewees admit getting tired finally because of the multitude of hyperlinks or avoiding texts overloaded with hyperlinks as a way of avoiding getting tired. In addition, it has to be noted that the relationship between emo-

tions experienced by learners while working with multimodal texts and hypertexts seems to be common (and is not country-specific as the interviewees discussed in the excerpts above come from different countries). Last but not least, at this point it can presumed that the proximity of a gadget, e.g. a computer with a connection to the Internet or a mobile device, somehow evokes this kind of fragmentary knowledge construction because of what might be referred to as "static physical position amid the vastness of the ephemeral virtual world of information": reading a paper book in a physical library requires getting up and going to a shelf in search of other books in the book on one's table does not provide the required information. A computer connected to the Internet offers it all just at one or several clicks without having to go physically anywhere. Thus it becomes very easy to engage in online search and leave paper books and physical library resources as a last resort.

Getting tired after clicking on many hyperlinks, reading from multiple windows, feeling lost finally after doing search through hyperlinks or spending much time doing online reading – all this can be metaphorically expressed as *tension* caused between two axes: the horizontal axe (hypertext reading) and the vertical axe (traditional linear reading). Tensions arise because a learner loses track of the sequence of bits of hypertext and, subsequently, is not able to locate "where you are exactly".

In short, despite of relating digital multimodal formats with their engaging nature (in the case of short videos) or the convenience of working with multiple windows open, sometimes multimodality is seen as too tiring (as with scientific texts that are relatively complicated in their content to be made even more complicated by *managing hyperlinks* and comprehending where they lead to). Importantly, the respondent points out the importance of learning to control all information flows. Learning to manage information flows takes time, so, to cope with it all, learners may opt for solutions such as what may be referred to as "reading by shortcut" (P16T).

Therefore, institutional structuring of requirements (for example, teacher's structuring course requirements regarding obligatory reading) has become rather *flexible* and managed more by learner rather than institution / teacher. A teacher's thinking that he or she is in a position to set how much and what reading has to be done within a course is right because he is empowered by his institution to do that. What seems to have changed, however, is that in fact a learner today has also become more empowered to decide on his own what and how much reading he prefers to do: *"Well, we know that what we do is giving our students a list of sources for reading. But let me ask you how many of your students will read all your sources? And how they will read them and what will they read? So then you think that your assessment of their work is based on your criteria. But aren't they making their own free choices in fact that we are unaware of? What I'm trying to say is that you never know how a person came to know what he or she knows. And even if a student has read all the obligatory sources, individual interests differ. And even when reading one and the same source we take different things from it. So we don't govern this "private" learning. There is no way we can govern it"* (P2F).

Digging deep until primary source

Digging deep until primary source implies a learner's efforts made and strategies used to determine the *original* source of the ideas encountered in a text. This aspect is related

with the conditions imposed by informational overload and the nature of media, i.e. what is assumed in this research as proneness to granularity.

The following excerpt reflects what a learner (or anyone searching for information on-line) often experiences: *"When a text is full of hyperlinks, you sometimes try reading them all and you move away somewhere from... from the topic that you started with"* (P3S). Importantly, the participant here indicates that he started with a certain topic in mind, i.e. his search was not random at the beginning. What happened though was that he was taken "somewhere" from his initial search by the hyperlinks encountered in his text.

"It is convenient, really convenient to search for information if these hyperlinks are not scattered but clearly organized... when you can jump directly to another page where you find even more specific information... if you have to find something specific. And then usually I would not say such text would be more difficult to read than this simple...linear text. Then hyperlinks don't disturb me (P4S). Hypertext is not seen as problematic if it is arranged in an orderly structure; it then facilitates searching for specific information, when "jumping" is seen as leading you to the more concrete information.

Granularity and fragmentation are imposed by the very hypertext: *"What people often do is open a link and they see that it is something that might be relevant. They skim it quickly. And this skimming quickly means looking for certain key words. And in fact you don't read the essence. And you see – we just skim it very quickly. It is no longer than 5 minutes. And 5 minutes is much. At best it's 3, well, 2 minutes until you skim everything and decide whether to read any more of it or not. And it's very difficult for students to read an entire text to the end. Especially for very young ones. Because we do things very quickly"* (P6S). What hypertext reading implies for this participant is **speedily skimming** just the surface of a longer text and, in addition, speedily deciding whether to continue reading or not. Importantly, she points to making this kind of decision as habitual and preferred one in comparison to lengthy, extensive and exhaustive reading "to the very end". This is linked to what has been discussed previously in the chapter on human-media symbiosis: information and communication media have been forming our habits that we have started seeing as natural for the young generation.

Another relevant issue regarding granularity is the length of time allotted for an assignment. The duration of doing an assignment naturally is related to the complexity of an assignment. However, the matter is much more complex because a deep investigation of a topic cannot be done in just a few minutes or hours. One research participant sees the relation between the complexity of an assignment and time spent on doing it in this way: *"It depends on the complexity of an assignment. Until I find the answers. Sometimes it takes a whole day. Sometimes a few hours. Sometimes you find it all at once. It takes just one or two minutes and you read it quickly. And you re-write it until you paraphrase it. It all depends on the assignment"* (P10S). It is one of the responsibilities of the teacher to show to one's students where the true complexity lies. Though topics or questions may indeed differ in their complexity, **knowing (or at least knowing about) the complexity** of the information architecture on the Internet, the role of search engines in shaping our worldview (due to the functioning of their search algorithms) and the impacts of mediated (not direct or physical) knowledge construction **is of primary importance**. Re-writing or paraphrasing

a text/texts read quickly may provide basic answers to some questions but nurturing learners' inquisitiveness and curiosity should become one of the aims of a teacher at all levels of education so that information and communication media would not impose their principles of providing quick answers as a "default" mode of getting to know the world.

In addition to learners' preference to find quick answers, media have shaped learners' preference for shorter texts written in simpler language. One interviewee pointed out that she opts for articles in English written by non-native authors to non-native readers because of simpler English and because of being authentic analyses or reviews of much longer, complex, theoretical works: *"Information there is already analysed and presented in a comprehensive way. I find articles much more convenient than text-books of theories because analysing pure theory on your own is very complicated. But if you read an article by an author who has already analysed all that theory, it much easier for you... to find out something about it, to comprehend it"* (P11S). What is implied by "theory" here is larger full works of other authors. This excerpt reveals a very telling attitude towards the amplitude of what has been written to day in different fields of knowledge and learners' strategies of trying to cope with it all. Importantly, authentic information is being searched in the described case though this information is not truly the first authentic source.

Opting for a particular communication mode: face-to-face or online

One more important aspect of the implications of granularity brought by media to knowledge construction is **understanding differences** between virtual online and face-to-face communication: *"I think communication online lacks some expressiveness in comparison to face-to-face communication. Even if you use emoticons or punctuation marks, face-to-face communication does not equal a conversation in WhatsApp or Facebook or simply online. So I think that we also have to teach about it as well, don't we? I mean about the necessity to express ourselves clearly"* (P19T). By lack of expressiveness here the interviewee in this excerpt implies loosing part of intended meaning in virtual communication and differentiates between live and mediated communication. Expressing the intended meaning face-to-face is related to better comprehension. As an educator herself, the participant points to the importance of educating about the differences.

Mediated ways of knowledge construction have always to be analysed carefully as the media through which we come to see the world indirectly may **impose** their viewpoints on us. Or, as it is evident from the excerpt below, distance communication can produce distortions or misunderstandings of intended meanings: *"Long-term distance communication via email with a student gradually distorts the initially communicated message. I remember my experience with one of my students. We had been involved in distance communication for a long period of time. I was consulting her about her assignment, a paper, for some time already when I started noticing that our communication was starting to go astray in some way. Though we had been communicating a lot, I could not convey fully and in-depth all I wanted to convey. Some things remained uncommunicated. Some misunderstanding started interfering. Consequently, we had to meet face-to-face to restore the track once lost, to fill-in the missing elements of the information I was communicating and even to correct errors that emerged, as I think, because of the distance"* (P17T). Therefore, the mediated communica-

tion that has replaced much of once oral and face-to-face communication among teachers and their students is not merely a convenience brought by the media. It is also an important issue to analyse because of the propensity of long-term distance communication to distort intended meanings as it is accounted for in the excerpt above.

Opting for a particular reading mode: screen or paper

Though research participants vary according to their **preferences** regarding reading on screen or paper, no participant in this research prefer only one reading mode. Obviously, in many cases we are forced to read both on screen and paper because of the ubiquity of media and variation in the formats in which information that we need is accessible. However, it also seems to be true that the human-media symbiosis has produced some natural habituation to screen reading. Therefore, nowadays we can only speak about some preferences in certain situations to opt for one or another mode.

If a learner encounters some inconvenience caused by reading on paper or screen, he or she easily **switches to a more convenient mode**: *"Well, if you read websites, then all these ads really distract you. Unless you have downloaded some add blocking app to block these distractions. Or I sometimes copy texts and save them in Word format. Then you read it as if it were on paper. It simple to do that... well, a text in a Word document somehow seems more simple and more inviting to read... because nothing distracts you"* (P4S). Notably, the interviewee here refers to distractions being advertisements only, but she does not refer to hypertext as a distraction. Thus, the preference of screen or paper reading mode is very conditional, i.e. learners have become very flexible as regards reading of various texts in various formats: *"We read less of paper books. But only because there other formats that we can have these books in"* (P4S). Thus states that adult learners read less have to be taken with caution because the amount of reading done on gadgets (more fragmentary and increasingly multimodal) daily may not be as small as it may seem based on unsubstantiated emotional states arising from nostalgia for the past.

Preference for paper format may be caused by convenience that is often described in emotion-related words such as "more pleasant": *"It is somehow more pleasant to read a paper book. [...] It is more convenient to use. Because there are chapters, well... Well, I am just more accustomed to a paper book"* (P7S). "Being accustomed to a paper book" implies here being accustomed to the **simplicity of the very format** and some **undefined feeling of comfort** experienced while reading a paper book that is explained by the interviewee as arising out of convenience and being used to reading paper books for a long time.

What seems to be a disturbing specificity of screen reading of a hypertext for learners is the propensity of hypertext to **lead a learner away from an initial topic or question**. The following excerpt reflects a very common experience of hypertext readers: *"I don't like too fragmented reading. It seems to me that you don't get deeper in a text then. So what happens - you cannot comprehend it fully. Because, as we already discussed it, you think 'Oh, what's this? It seems interesting' and 'And here is something else...' Maybe, maybe, it's enough to read that little fragment at the moment just to get an idea what it all is about. But, look, you can't deny it – if you want to analyze a problem in-depth, you need more information, more sources. And more hyperlinks focused on the topic. If the hyperlinks are focused and relevant*

for the topic, then I think they should function not as some detached veiled text, but rather as some more elaborate explanation of what exactly a hyperlink leads to so that it's easier for you to see whether it's worthwhile clicking and navigating away from your initial text. But if these hyperlinks lead you to an increasing number of different problems like, for example, if you started reading about translation and you end up reading about culture... Well, these are related, but still they are also distinct fields. Normally you need very specific information. So I am more for a more relevant unified text" (P11S). What is evident here is the ease of navigating a paper book because of its assumingly simple and clear structure that students of today are still used to. It might be that the younger generations of learners, the would-be students in higher education, will not express such concerns because the changes brought by the human-media symbiosis will be even more pronounced, but currently learners opt for one or another media depending on the situation and the comfort that they experience at the exposure to one or another reading mode. Meanwhile, the reasons for opting for a paper book if it is available are defined as disliking hypertext reading for poorer comprehension, fragmentary hypertext reading as "scratching only the surface", disliking fragmentation as causing irritation and unpredictability of where a hypertext might take you.

Learners make use of the advantages of both paper and digital media and often use them at the same time ***in combination***. Paper media, for instance, helps learners to tackle the ephemeral nature of information on the Internet: *"I prefer reading on paper. I prefer, well... there are many, many problems [related to reading on screen] such as when you want to highlight things. But I prefer, prefer paper. I don't know. I don't know why. You can read things on computer [screen], but I prefer paper. [...] All I have there [shows a file of paper sheets] is for my end of the year project. I have everything printed. Because... when you are reading on screen your eyes may get tired. When you are reading a lot on screen. And I read on screen all the time... So I prefer reading on paper if I can... and you can take the paper wherever you want. I prefer paper. Something that you can learn better from"* (P18S). This interviewee stresses her preference for reading on paper as an option to reading the same materials saved on her computer or library computer. It is difficult to define preference (as it can be seen from constant repetitions of 'I prefer paper') which may be explained by the student's wish to make the materials physically tangible so that she can memorize and understand things better by highlighting important points. Another research participant (from a different country and three years younger than the participant just quoted) puts it in a surprisingly similar way: *"Well, I don't know, maybe I would choose a paper book where you can highlight things easier. Or you can use a sticker to mark important information. An electronic version is not that easy to mark. But electronic version has its own advantage. The search function. You are taken to the page where your searched word is found. And so you get all the information you need in an instant. So you don't have to read the whole book. You just... find it... instantly"* (P11S). This quotation reveals two significant things. Firstly, information in paper version is also seen as more physically tangible as you can mark important things by highlighting them. This is a strategy to tackle the ephemeral nature of the information in a digital media. Secondly, this quotation is very telling in the sense that it explains why information stored in digital format and used in digital format is being related with what is referred to as "granularity" in this research.

Interestingly, preference for paper or digital media does not seem to be related to any generational differences: *"I prefer paper. And that's despite of me working in the field of distance learning. I also work as a librarian. I do so much of search in databases and read a lot on screen. Articles and things like that. And still I like reading on paper more. And even more than that. Maybe I'm too old, I cannot change. You know what I do? When I write, I first write things on paper by hand and only then print them. This is because I do not see the whole of it on screen. Even if it's the first draft. I prefer writing it on paper. Maybe I am very weird in that sense [smiling]. But others... my father, for instance... he is 66 years old now. He does not use paper, he writes things on his computer, doesn't want hand-writing. Somehow. Yes. [...] It's so interesting. My brother is one year older than me. He also writes things on his computer screen. My father only writes short things on paper when there is no computer at his side. But for me... maybe it's because hand-writing is slower. And your thoughts flow more smoothly. I don't know. This is something that I cannot explain. But yes, I also thought about it before that this might be related to generational differences. But then I understood that it isn't exactly that. Maybe it's differences among individuals. I don't know"* (P14L). What the research participant refers to as "differences among individuals" is actually evidence for how much of symbiosis has occurred in a particular individual. Therefore, presumably, generational differences make little sense if such issues are taken into account.

Thus the morphing of the lived world has been affecting our attitudes to traditional modes of reading and writing since the advent of modern digital media and the Internet. Interestingly, humans have adapted to the changes very easily and creatively. This is reflected in how difficult it is to explain why we prefer one or another mode of dealing with information. On the other hand, creativity reflected in how individuals perform their small daily assignments and the spontaneity of engaging with media in very diverse ways manifests our ability to adapt to new conditions in our attempts to perform the assignments in what seems to be the best, most efficient ways. *"In the beginning, I used to print the materials of the first seminars of our course uploaded in Moodle. But then I quitted doing it. When we had to do some exercises, I just wrote my answers in my notebook. But I was doing screen reading all that time. [...] Even for revision. Because it's so convenient to have all these slides of lectures that you can download on your tablet and then read them there. It's much more convenient than having all these sheets of paper some of which sometimes get mixed or lost... Digital format in this regard is more convenient"* (P11S).

3.2. Anchoring: strategies of coping

With the increasing sophistication of media, the process of knowledge construction is essentially transforming. The indeterminacy of the current situation has been referred to in this research as MORPHING. While MORPHING describes a very fluid state-of-the-art a higher educational institution is functioning in, ANCHORING, the second axial category, essentially subsumes efforts of the actors in a current higher education institution (students, teachers, librarians, educational technologists, administrators) to tackle the challenges faced under current conditions of mediated knowledge construction. ANCHORING extends through three dimensions: (i) *re-thinking educational institution*, (ii) *critical appraisal of information*, and (iii) *coping*.

3.2.1. Rethinking educational institution

Educational institution has been undergoing tremendous changes under the conditions brought by the increasing mediatisation of the ways human beings are getting to know the reality of their life. Therefore, first and foremost, the role of the teacher has changed and needs re-defining and re-thinking. Secondly, learning as a phenomenon and a process also has to be re-defined: as it has been pointed out above, the morphing world and the transformations brought by this constant indefiniteness of the current state-of-the-art have resulted in certain insecurity experienced by all actors in the educational settings. Educational institutions have been trying to adapt to the morphing world by adopting media of information and communication and incorporating them in the educational processes. The use of institutional virtual learning environments has extended the physical institution into the virtual electronic realm. However, there seems to be some tension between the imposed used of an institutional VLE and students' spontaneous preference for all those popular social networks that they are using daily for numerous other activities besides learning. Consequently, certain shift in what can be called "locus of knowledge sources" (institutional vs. "free-range" information) is being observed. Thus, in the section on re-thinking educational institution, four aspects will be elaborated in relation to the research data: (i) *re-thinking the role of the teacher*, (ii) *re-thinking learning*, (iii) *the tension existing because of the imposed use of institutional VLEs versus "free-range" SNs*, and (iv) *a shifting locus of knowledge sources* (Figure 4).
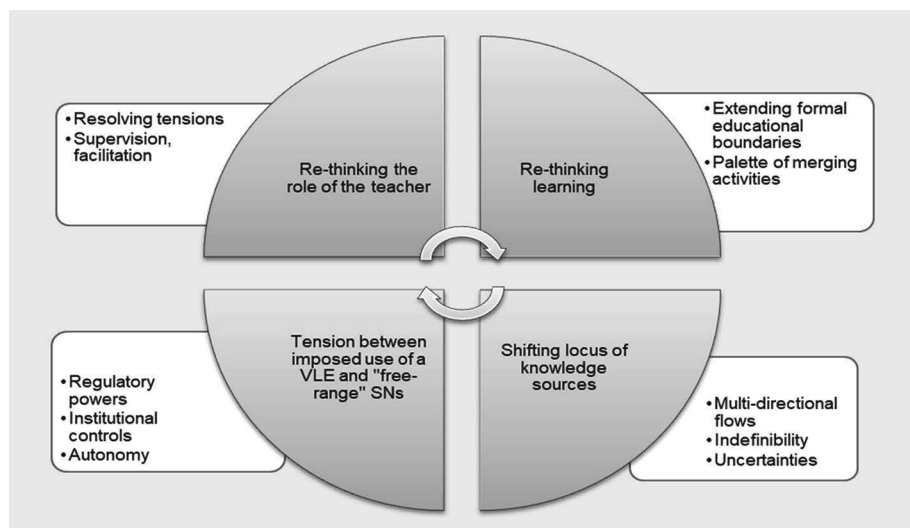

Figure 4. *Re-thinking educational institution (drawn by the author)*

Re-thinking the role of teacher

The networked communication and the online world of information and knowledge repositories have re-shaped the traditional roles of the teacher and the learner and have

changed the directions of information flows. The changes have shaken the long-standing stability of the relationship between the knowing one and the one seeking knowledge in formal educational settings. The role of the teacher centres around four aspects discussed in this section: first, *maintaining focus* in the learning process; second, *resolving tensions* between the institutional power to assume control and technologically conditioned increase in learner autonomy to construct his or her knowledge in preferred ways; third, adopting a thought-through and systemic approach to teaching about *source criticism and referencing* issues; and, fourth, *raising awareness* about the media beyond merely operational level.

The dispersal of information nuclei into multiple, often ephemeral and undefinable (or at least difficult to define) sources of information on the Internet has brought with it certain insecurities and, at the same time, quite the opposite – more power of finding out information and acquiring more power over one's learning ways to the learner. Teachers, on their side, have also experienced multiple insecurities and have faced the need to adapt to the radically changing conditions with the advent of the Internet and the new media of communication: *"Of course, what is changing in the first place is the role of the teacher. In the networked space, the teacher is no longer the sole source of knowledge... The teacher is the one who either supervises or often leads people towards the right information sources"* (P1ET). The teacher, all transformations notwithstanding, retains one of the essential elements in the learning process, i.e. that of the knowledgeable actor: *"Sometimes when the community [the virtual learning community] is not too deeply knowledgeable about the whole situation, just to make sure that the whole communication does not go astray, we need some administrator. It is similar to project work. This community needs some supervisor who would make sure that the focus is maintained if need be"* (P1ET). Maintaining the focus in the learning process is one of the key factors of successful learning outcomes. It is also vitally important for becoming a media literate person. Distinguishing between fact and opinion and discerning disinformation under the conditions of overabundance depends on nurturing the insightfulness of the mind and much practice in appraising sources and information.

Besides, teacher role still retains some regulatory power (and this is natural and specific of any societal institution, i.e. to regulate certain activities): *"You cannot just leave the communication within a cloud for self-regulation. Because the learning outcomes may be 'incompetent'"* (P1ET). This would probably be opposed by many technological enthusiasts pointing out to the liberation from institutional power brought by media of information and communication but retaining control over the learning process and outcomes is important for those representing brick-and-wall educational institutions. However, the issue of control is rather sensitive in educational settings. Willingness to assume control and thus gain more power is a feature that is commonly human: *"Well, maybe sometimes a teacher is willing to assume or control. Or maybe it is something like your social role. Institution renders this power to you to supervise the student. How he learns. And every person... you just give in to this and assume this role. No matter how democratic you attempt to be you have to be controlling to some extent. [...] And some teachers start seeing this role so important that they identify themselves with control"* (P2F). Importantly, this viewpoint reflects that identifying oneself with the power stems from representing an institution and often goes on unperceived or not reflected upon.

What is obvious, though, is that teachers are trying to align the technologically-conditioned tensions they are experiencing and the long-established and effective methods and formats of teaching they have well tested: *"Even if I try to use this 15-minute-long lecture format or something like that, my students still want discussions with me. So what happens here – you set time or deadline for watching your video, they watch it, and you still have to systematize it all afterwards. They need discussions. But if you have all these discussions with individual students in the forum of your VLE, then what happens – the time teacher has to spend on this [with individual students] is extending"* (P2F). Therefore, uptake of innovations is not that easy as technological enthusiasts state. What is evident in this quotation is that, in addition to the tensions brought by the need to adjust one's teaching methods to the rapidly changing educational reality, teachers also have to face the potentially increasing amount of work and lack of time.

Regarding the transformation of the traditional role of the teacher due to the extension of the learning into the virtual space (and the advent of distance education and its challenges), the field of studies matters a lot. Besides, it depends on the amount of rote learning required and the resources of time a learner has: *"It has to be admitted that in learning languages the direct presence of the teacher is necessary. Because an individual on his own won't improve pronunciation or understand nuances. It is quite complicated. But in case of the fields where much has to be memorized and then reproduced for assessment or read completely, then, surely, a person can learn this on his own. And distance studies suit perfectly for this. Because adults sometimes cannot find time for attending lectures. But they may have certain previous skills necessary for learning and preparing individually. This is quite likely because it is very probable that they have already studied something else or their skills have been formed during many years of work experience, then for these people individual preparation and distance learning make life much easier. And the teacher in such case becomes a consultant helping to reach a common goal. [...] But, in every case, a person has to know which directions to take. [...] if you tell them to study whatever they want, they will get lost. At this point the teacher is the one who provides a scaffold – so that you don't end up at the second or third topic without having studied the first one. Without this [scaffold], learning will be scattered"* (P5T). Importantly, no matter whether the physical presence of the teacher is needed or not, the teacher role of a consultant, supervisor and guide is always retained. Facilitation in reaching common goals is always an important component in successful learning outcomes.

Another essential aspect pertinent to the role of the teacher is consulting about the source selection, source criticism and referencing: *"Speaking of the selection of sources, I am firmly confirmed that here, most probably, most of the attention is on the teacher. It is teacher's responsibility to supervise it and advise students on the selection of sources. Students have to follow the methodological guidelines for writing yearly papers, Bachelor or Master theses that stress the importance of referring to databases for information search, and not merely the Internet or social media or some website..."* (P5T). But there is a difference in making purely formal requirements and paying close attention to bibliography lists: *"Teachers demand bibliography lists at the end of slide presentations. Some of them do it just to make sure that formally the presentation contains all necessary parts. But some of them even pay attention*

to the sources themselves" (P9S). The approaches of teachers to source referencing done by students have to be well-analysed and systemic. Pre-assuming in advance that all students know how to reference sources (and discern differences in quality of sources) is a problematic issue that has been recurring throughout the entire research.

Last but not least, educating a media literate person assumes constructing in-depth knowledge about the media that fill our lives with knowledge and information. Another recurring and much discussed motif throughout the research is the unsubstantiated over-reliance (that often goes on unnoticed and is spontaneous and rooted in habituation) on merely one commercial search engine: "*Teachers should bear in mind that for many students Google is the first and the only source. So they should ask themselves whether they would like their students to prepare their assignments based on Google search only. That's it. It does not take much time. Because teachers are dissatisfied when their students admit that they have used only Google search. So teachers should be concerned about explaining to their students how to search for reliable information*" (P11S). An important implication for educators at tertiary level (and probably any level nowadays) is teaching students about the diversity of sources and the media that are used to construct knowledge.

Re-thinking learning

Naturally, learning (as a phenomenon and a process) has been also subject to the strains and challenges caused by networking, technologization and mediatisation: "*From an institutional viewpoint, I see this discrepancy... society, in fact, fears all that informal learning because it does not know, cannot define the outcomes. And thus it acknowledges only the formal education. And here [in the virtual space] we are faced with much of that informal, uncontrolled... activity... I do not know if I can say 'learning' because everything we do is learning. It is a big question. [...] Because, undoubtedly, there is so much of informal learning going on and so many activities that we have to take into account. But we have to start by acknowledging that indeed there are some activities going on there [in the virtual realm] implying the necessity for institutional change. Institutions adapt, acknowledge, I mean they admit that you can learn things uncontrolled, but then it has to be assessed somehow*" (P2F). In this excerpt, the interviewee refers to a very important feature of the changing perception of what learning is and the need to re-think and to re-define it. The ways to learn are multiple. Therefore, the interviewee states that "everything we do is learning". Media have made defining what learning now is complicated. As a result, formal education institutions are facing difficulties in assessing learning outcomes. Traditional definitions are too narrow and too limited: they do not capture the totality of activities that contribute to learning in multiple yet little known ways. Thus, institutional attempts to govern the learning process in new (and yet little tried) ways, indefiniteness of learning outcomes achieved through informal learning, informal learning abundant in institutionally uncontrolled activities, learning as a palette of activities – all these factors are contributing to how an educational institution is undergoing experiential transformations.

The **blurring of the boundaries between formal and informal learning** (that has occurred due to the extension of the formal educational settings into the virtual space and the consequent merging of numerous spheres of an individual's life) has brought considerable

confusion into conceptions of learning: „*In fact, if you think well, the very word 'informal' is complex... Institution is a structure. And it is difficult to incorporate into a formal structure something that is informal. Anyway... what is interesting here is that, finally, we have to face some assessment anyway... it ends as structuring... acknowledging... well, acknowledging that you have acquired knowledge in different ways, through un-governed processes, but it still corresponds to some expected outcomes that are declared as being achieved through institution*" (P2F). Educational institutions, researchers and policy makers have been long concerned about the ways of aligning institutional structure (with all its implications for how learning occurs) and acknowledging informal learning outcomes acquired via institutionally ungoverned processes. In this particular excerpt, the participant implies that institutionally acknowledging probable outcomes of informal learning means seeing informal learning outcomes as potentially corresponding to institutional assessment. Another important implication in this quotation is that of seeing assessment as a kind of structuring, i.e. an educational institution (in its physical guise and virtual extensions) can offer an expert approach to facing the indefiniteness and the ephemera of the processes occurring in the virtual reality and the transformations in the ways learning is occurring nowadays.

The complexity of transformations that the educational world is undergoing is reflected in the following viewpoint: *"I think learning should not be appropriated by an institution. We might distinguish between public and "private" learning. In fact, learning is always "private""* (P2F). The choice of words "appropriation", "public" and "private" in regard of learning show the tensions that the actors in educational settings have to face. The distinction made by this interviewee between "public" and "private" learning (and stressing that learning is always "private") stems from (i) the increasing engagement in some undefined learning occurring in the virtual environment and (ii) an institution reacting and adapting to transformations imposed on it by the transformations in the lived reality.

Acquiring certain part of the knowledge accumulated by society throughout its history can be said to be the aim of learning in societally established and acknowledged ways, i.e. formal schooling and university education resulting in ***assessment*** and acknowledgment essentially through formal assessment by established bodies. *"Society has been always structuring its knowledge about different fields. And this does not change easily. But everything else around is changing. Assessing the acquired knowledge becomes reactionary and conservative while the very process [of knowledge acquisition] is very fluid. Besides, I have listened to this lecture on philosophy by Mickūnas. So, allowing for change and revising the concept of formal education is the basis of survival of a democratic society. So, I think that though activities are changing, some elements like control maintain the stability of formal education. At least assessment. [...] Acknowledgment is maybe a less charged word. Not assessment, but acknowledgment. But it is still controlling. Still controlling. Domination of your knowledge over theirs"* (P2F). Institutionally structured knowledge, its acquisition, assessment and acknowledgement have been confronting the external fluidity of the virtual space. In a similar vein, "reactionary conservative" assessment has been facing the obvious need to somehow define fluid outer learning processes, to embark on institutional change by revision of concepts and constant tailoring of concepts (for instance, acknowledgement instead of assessment). Institution inherently is prone to govern processes and impose control but one of the con-

sequences of having been forced to subside to the conditions imposed by the Internet is that of admitting that efforts to govern and control have to be aligned to the new conditions and that concepts have to be re-defined: *"We don't govern that "private" learning. There are no ways to do that. We want, that is, we are trying to structure it through formal education by programme and course descriptions. But we don't govern it"* (P2F).

Institutional VLEs vs. SNs

In their attempts to uptake the digital space, educational institutions have taken into consideration the constant and ubiquitous presence of the informal social networks in the learner's environment. But educational institutions have mostly been using social networks to make themselves more visible in corporate-speak terms of marketing. To become innovative and attractive for learners, educational institutions have taken up virtual learning environments such as Moodle to **transfer part of teaching and learning into the digital realm**. Social networks have indeed turned out very effective in outreaching would-be students, social partners and other concerned parties. Virtual learning environments, however, do not seem to be that effective because of two reasons. Firstly, they have certain technological limitations (Moodle, for instance is open-code and therefore, according to educational technologists, lacks sophistication in terms of interactivity and instantaneous reach, and, secondly, as the data in this research suggests, there is some kind of tension between learners' preference for managing all their study-related materials and communication in the space more convenient for them and the digital space externally imposed on them by their teachers and educational institutions. *"I think that the institutional VLEs retain the features of formal education. Control, assessment, supervision. What changes though, possibly, is that a student has become more autonomous. Because he wants to connect when he has time. Or, at least, [what he needs is] to know what assignments he has to do and to know that he can search for some additional sources of his preference. How he does his assignments is his own decision. There is more, more of that autonomous learning..."* (P2F). What is obvious from this viewpoint is that a formal institutional VLE is still related with teacher control and formal assessment and supervision while learner autonomy is increasing: the learner is managing his own time, is enjoying the flexibility of choice, and, what seems to be very important, opts for the interactivity and liveliness of social networks.

The element of **control** is constantly recurring in the data: *"Besides being very unwieldy [the formal institutional VLE, Moodle], there is one more thing about it that teachers might not think about. It is a very good way to control your students. Because you see it all: when your student was connected, what [he or she] uploaded, what wrote, just everything. Otherwise, if not in Moodle, you set some reading assignment, for example, and you do not see when, how long and how the assignment was being done. Here you see everything... And it is not only Moodle... Any VLE functions like that saving the information, the date [...] You see so much and it's so easy... like some Big Brother"* (P2F). In comparison, the informal social networks (that are preferred by students and that are used spontaneously due to their convenience and proximity are contrasted with the use of institutional VLEs such as Moodle that are seen as "unwieldy". However, both teachers and students admit that there are considerable advantages in using Moodle. Despite of that, there is always some "competition"

between the spontaneity of preference for informal social networks and the institutional requirements to use an institutional VLE.

For teachers, institutional VLEs offer numerous advantages: *"From a teacher's perspective, the use of networked learning environment eases your work because you arrange everything in a sequential order. I, for example, am teaching two subjects now. And I have put all subjects of these two courses in the VLE in a clear sequential order. And I can change things much more dynamically when preparing presentations or my lectures. Similarly, I can change the teaching materials for students. In the archive, I can see every change I made in the run of two years since I started delivering these courses. I am freed from keeping all these materials in my gadgets or at home and worrying about losing things. Because in our distance learning department I can get all the help I need to restore things. And I find VLEs really good. Perfect for teaching. I can have some seminars in Moodle if some part of the course implies much of individual student work. Of course, when I have my Moodle seminars I am always connected and I can help students any moment they need my help. Or comment on the assignments they upload. Correct mistakes and give answers. Give feedback. What is also important is that our VLE has a broad range of available tools. For testing, group-work, self-check, rapid blitz quizzes, open questions for opinion"* (P5T). As evidenced by this quotation, the teacher enjoys the possibilities of structuring processes, guidelines, and field-related materials offered by his institutional VLE. From this perspective, educational VLEs facilitate the teaching process when the virtual space is replacing part of formerly physical activity efficiently. Anyway, institutional structuring of the learning processes is related to the attempts at the managing those processes. If a VLE allows for effective management of materials and the teaching process, then teachers seem to be willing to use it.

Communication among students themselves, however, tends to **extend institutional boundaries**: *"They use all new technologies 100 percent. And I am talking not only about the university VLE, but also all those social networks and other networks that they engage in as students or ordinary users. In the process of studies, the role of social networks is a solution to their problems. In the past, whenever a student had a question or some problem he could not solve it as quickly as now because of a limited network of people. Several people cannot solve a problem that quickly. Now, on the contrary, a student can post a question in the wall of any social network he uses and receive 50 different answers and choose from them. If 37 out of those 50 state the same thing, then it is probable that it is true. And this thing is very important"* (P5T). The interactivity and liveliness of social networks does not equal that of the quite rigid institutional VLE lacking these features of the most popular social networks.

Therefore, students' position often differs from that of teachers as regards the **usefulness** of institutional VLEs: *"In Facebook, you see instantly who is connected, your friends... and you know, well, this person can give me an answer in a matter of seconds. And the Moodle forum... It would never occur to me to search people for consulting there. Because you never know when your contacts log in. Unless you stay there waiting and waiting... you never know. It is much more difficult to get information there. And even if somebody answers your question, you may be already disconnected"* (P11S). Students' viewpoint is often stemming from one essential feature of social networks: their preference for Facebook in particular over the Moodle forum is related to the interactivity (and, thus, efficiency of communication) of

Facebook and the rapidness of getting wanted answers. This explains why the institutional Moodle forum is usually ignored and not used.

A formal institutional VLE such as Moodle has been described by one participant as too complicated and confusing because of the problems related to navigation among the many subjects that the student has in her subject list. In contrast, she sees such sources as a teacher's blog, for example, easy to navigate: *"A blog is free access, first of all. No restrictions, information is freely available. You just have to know the address and that's it. No need to contact somebody and ask for permission or an enrolment key. A blog is easy to access"* (P11S). The simplicity and rapidness of doing things and learners' preference for freely accessible information is a consequence of their habituation to accessing online information easily, quickly and, in many cases, for free and without the need to enrol that seen as burdensome.

It is important to note at this point that learners' preference for informal social networks over the institutional VLEs is not only a question of the advantages offered by one particular social network. This preference should be viewed in a broader context – as a preference for the more informal and ***all-encompassing*** space rather than a technically-limited and interactivity-lacking platform: *"We don't use Facebook because I think that Facebook in Spain is still a bit, like I said [not very popular]. We use it [Facebook] for friends, for communicating your ideas, for friendship, I think... But here what I have seen is students using WhatsApp. For communication. Students even in their fourth year, they have almost finished [their studies here], and they haven't used the university email. That's something that I don't understand. I have this email for my studies and I have my personal one. You have to separate them. But I don't know why students don't use this [university email] or even Moodle. I have tried it. I have sent some messages to my teacher and elsewhere. We have used it for forum to share opinions, but only because it was compulsory. Because the teacher told us... that we have to do that. But not because we wanted"* (P18S). In this particular case, Facebook is seen as an entirely personal space and students are said to be using the application "WhatsApp" for study-related communication. However, the learners' preference for informal communication is still evident, just like rarely using institutional student email and using different emails for studies and personal communication unless teacher requirements "re-arrange" their preferred ways. What is more, students prefer a space for the communication within their group that excludes their teacher to solve the issues related to their studies: *"Yes, by WhatsApp, exactly. Because here, in this university, we have two types of studies: you can come to lectures or not. But usually people... they register for coming to lectures but then they don't come. Because of work or whatever. It's not something compulsory. You only have to attend the practical seminars. So then they look for information in Moodle. But since they haven't gone to theoretical lectures, they are asking questions in WhatsApp. Because we have our group there, all the students in group A, for instance. And they ask if some topic is going to be included in exam questions or not. Or what they have to do for the practical seminars. So we use WhatsApp. [...] Yeah, if you're not coming to classes, then you obviously ask questions in WhatsApp. It's now the most powerful tool for communication"* (P18S). Assumingly, one of the consequences of the advent of media of information and communication – and social media in particular – is more informality in the learning process. Therefore, students prefer using their social networks to the formal institutional forums. Thus, teacher as a

representative of the formal institution is excluded from the internal communication about the study-related issues.

Shifting locus of knowledge sources, institutional info vs. 'free-range' info

The main tensions here arise in the search for what is supposed to be quality information: institutional sources tend to be (and in most cases indeed are) very reliable sources of information. However, the learners interviewed in this research seem to reflect a very interesting tendency: they are very prone to use what can be called ***"free-range" information***, and they learn to use institutional resources either because they have some knowledge about the differences in source quality and critical appraisal of academic information or they are required to do so by their university teachers. Teachers, conversely, are also struggling with the tensions brought by the overabundance of information available on the Internet. Thus some teachers are trying to delimit the scope of search for both themselves and their students: *"I don't tell my students to go and find all the information on their own. Because if I do so, I have more additional work for myself. I will have to find out whether the information that they have found is reliable, whether it matches what I wanted from them. Or because I am not sure, for instance, whether the answer that they have found to my question is trustworthy if I myself do not quite know where to search for answers, if a topic we are analysing is quite new. This is why I always at first find the answers for myself in institutional databases that are trustworthy, that are subscribed to by our university or that are free-access on the Internet"* (P5T). The way of coping with the information overload described by this research participant is based on very clear criteria for delimiting the scope of search: they are a secure way to delimit oneself to the narrowest field of vision ensuring trustworthiness of sources, and, importantly for the teacher, safeguarding him from insecurities of coping with information coming from undefined sources found by students.

Media have changed the educational institution's role of the sole source of knowledge delivery. Also, media of information and communication have ***re-distributed the powers*** of the actors in the learning process in the sense of the balance between who is most likely to know the truth: *"If you asked students, they would tell you about many cases when even a teacher cannot catch up with all novelties. As, for example, if some change was introduced just a week ago and the teacher was very busy at that time and his students spot some inconsistency. Well, usually it is some minor change in information that does not essentially impact the whole course, but the teacher at the moment when some student corrects him can admit it and correct himself after cross-checking the information"* (P5T). In other words, learners now are in the position allowing them to cross-check the knowledge delivered to them by their teacher.

3.2.2. Critical appraisal of information

Information overload brought by the Internet has expanded the possibilities for information searching tremendously, and the boundaries between what is reliable and what is not have become rather blurred. This has granted more powers to the learner to construct one's knowledge by "re-defining" truth by asking an unlimited amount of questions that

can be raised online anytime (for example, in social networks) and the rapidness of receiving numerous answers from defined and undefined sources (P1ET). Therefore, an individual searching for information may face certain uncertainties and doubts that are seemingly quickly resolved by consulting others online. The overabundance of information flows has resulted in the changing perception of time. Because answers may be received quickly individuals perceive time as flowing faster and the amount of work to be done may cause tensions. One of the interviewees thus described his perception of the flow of time, things and people online in a metaphorical way: *"All life now resembles the movement of people and things in large airports, for instance, Munich. You arrive there and step on the moving trail that is taking you forwards. But if you stand still, in fact you are moving backwards. If you move alongside with it, other people pass you quickly in the opposite direction"* (P16T). The indefiniteness of the direction of movement is one of the biggest challenges that have to be resolved by all Internet users. Therefore, it is important to know media that you use every day more in-depth, not only operationally and mechanically because of habituation and convenience. More specifically, as regards the information flows, it is vitally important to appraise critically one's information search skills, habits, preferences, tools and the information itself. A telling simile of the anatomical impact of boxing was used by the same interviewee to describe the impact of facing incessant information flows. "Getting hits on the head" causes knock-outs and, consequently, one is left dumbstruck for some time: *"So, technologies, to my mind, they keep "hitting" on your brain in many ways. Keep hitting and hitting and hitting so that you are constantly "dizzy". Thus you never get to the primary source. One thing is engaging in entertaining for pastime. Very unproductive, but many of us allow this. But from here to propaganda, let' say, there is only half a step. Because the same techniques are used. You don't let a person rest a little bit from all that information"* (P16T). The overabundance of information may be a pitfall because it erases boundaries between serious content and content for entertainment, and between fact and disinformation, it makes it difficult to "dig" deep down to the primary source, and it distorts the perception of time (thus causing tiredness, ineffective time management, poor critical appraisal of information, and the proneness to opt for easier solutions in solving problems or doing one's assignments): *"What I have noticed above all in my students is that they cannot distinguish trustworthy information from untrustworthy. As you've referred to it before, 'the oversaturation of information'. They are facing the saturation of... of tools that they can use, of various online media, of everything. But the major problem is first and foremost not being able to distinguish the trustworthy from untrustworthy. And how to detect what we call here in Spain "the waffle" in the content, what is superfluous, what is valid or not valid from what is really important. This is why I believe that this is the most important ability"* (P17T). Assumingly, the ability that learners nowadays need and that is one of the key factors in critical appraisal of information (especially under the conditions of intensive networking and the ubiquity of the Internet) is the ability to discern what this interviewee calls "the content waffle".

Critical appraisal of information in this research implies taking into consideration numerous factors pertaining to the use of the new media and technologies in educational settings. Critical thinking is the key element in critical appraisal of information (and media); however, besides critical thinking, there are other important related phenomena pertinent

to the information search, learning, and knowledge construction in the virtual space. Thus, in this section, four aspects will be discussed that have emerged as significant in critical appraisal of information and sources: (i) the reliance (and possibly overreliance) on the sole and most popular search engine (what is figuratively referred to in this work as "*Gone with the Google default*"); (ii) *the Wikipedia paradox* (a common denial by learners of its suitability for knowledge construction and even its downgrading as a reliable source and the astonishing reporting of still using Wikipedia as a source that assists learners in making their first steps in complicated information search and that is seen as useful for acquiring contours when a topic is largely unknown); (iii) defining *criteria of critical appraisal* of information (such as encountering the unexpected and the impact of teacher guidance on selection of information); and (iv) the need of *re-thinking library and the role of a librarian* as a professional navigating the online space effectively and an aide in dealing with the information over-saturation (Figure 5).
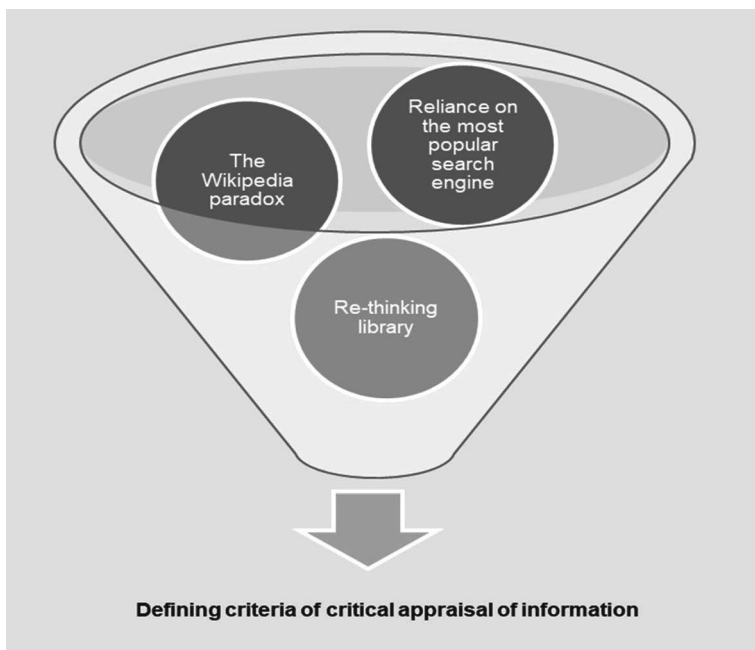

Figure 5. *Critical appraisal of information (drawn by the author)*

Gone with the Google default

Resorting to Google search is very common and often goes on **unperceived** and **unquestioned**: *"Well, most probably the most common way... when you just open Google and type in your topic's key words, in the sequence that can be recognized in a text. Type it in the search slot... and that's it, you have it"* (P6S). In some cases, learners admit searching Google Scholar that is seen as "smarter" than Google but still Google is overwhelmingly

popular: *"If you need some... some smarter information... then I search in Google Scholar... but normally it's Google. Everything in Google"* (P6S). It seems to be strongly related to the habituation of learners to their preferred ways of searching information: *"If accidentally I see that my homepage is Bing or Yahoo, I switch immediately to Google. I don't know why. But I trust... trust Google most. Well Yahoo... Though Yahoo Answers sometimes give good things, well... some practical, but I have never found in Yahoo search some scientific information... well something... something serious. And others... don't know anything"* (P6S).

It has to be noted, though, that it is not the aim of this thesis to establish whether the ubiquity of most popular search engines is more beneficial or more impeding; rather, the aim here is to substantiate the viewpoint that users of media have to be aware the media that they employ in learning processes on a more advanced level, not merely using them operationally. Habituation to one unquestioned mode of information searching may narrow the width of vision, restrict access to diversity of sources, and create a distorted illusion that all knowledge and wisdom of the humanity can be found via one search engine. Some interviewees have shared their doubts about the quality of sources they encounter via most popular tools: *"I don't see Google or Wikipedia information as reliable. [...] Because you can read about some theory that was later criticized and rejected but there will be no mentioning of it. In text-books you will find many theories mentioned but there will be such notifications. There is much outdated information on the Internet. Information that is no longer valid"* (P7S). In their search for truthfulness and more grounded and reliable positions, they return to consulting the long-established routes such as consulting text-books. What has been referred to as over-reliance on one sole search engine and the limitations such habituation may result in is obvious in the following extract: *"I mostly start with the first Google search result. If... Sometimes... I read the second one as well just to get a glimpse of what it is about. But mostly I open the first webpage... for what I am searching. If I find exactly what I need, usually the first search result is enough. And if there is plenty of information that you need, then I mostly read just the first three pages, not more"* (P7S). What is seen as a limitation on the field of vision imposed by the use of Google recurs in numerous interviews: *"Yes, I use Google. And... eh.. I don't trust others so much. I don't know why. [...] And yes, I have used Yahoo. I don't know why but their search engine is just isn't comfortable to use... because in fact I'm not quite well acquainted with it"* (P9S). What is overwhelming here is not giving any explanation for one's trusting Google that much. This shows that we have become accustomed to ubiquity of media and think little about them, we only enjoy using them because of the ability to facilitate the processes we are engaged in.

It is surprising that though students admit the sometimes questionable quality of information found by simple Google search and see academic databases as more reliable, they still opt for Google search results because of ***free access to numerous sources***. Google content is seen as difficult to define because "anyone can supply information there". Nevertheless, Google is opted for spontaneously and unwittingly: *"The content, content... well, I don't know, maybe there are less errors [in a database]. Maybe it is better managed. And edited... Because Google content... well anyone can supply information there... but I haven't though much about that... Any student, whatever... It is not that reliable. Because I think the books in databases are protected by copyright. Well those that cost money. They are more reliable"*

(P10S). Free access to information is very important for users of the Internet. The question of what is seen as "free" is important just as well. Ordinary Google users rarely think about how Google uses their personal data. Thus they see Google search as free. Conversely, students often are unaware of the expensiveness of the databases subscribed to by their universities and, consequently, these expenses of educational institutions do not bring benefits they could bring if students were aware of the advantage offered by their libraries. Therefore, much of what is pertinent to the issues discussed in this section is related with the distinction between "institutional information" and the so-called "free-range" information.

Meanwhile, there is some kind of "floating" with the Google current. Even if Google search results do not yield the required information, Google is still **persistently** used: *"But what can you do? Anyway, you have to find information somewhere"* (P10S). However, this may change with a strong insistence by teacher to study a particular book: *"Google. It's always Google. Well... unless I know that I am required to use a particular book. If I am told to use a particular book, then, of course, I do it. But... well... it's basically Google [laughing]"* (P10S). Interestingly, the following interviewee makes a distinction between information located in their social media communication and "professional expert opinion" that may be acquired via one's most used search engine: *"When we are preparing some information for presentations, we do this in Facebook very often. Because we hardly have time for meeting somewhere when we have to do some group-work. So we share everything in Facebook, we write messages, share various information, files, and it is convenient. But if we have to find some professional expert opinion, then we usually resort to searching in Google"* (P11S). So it is not surprising that teachers are often concerned about students' ignoring academic databases and not being able to do an advanced search in Google Scholar: *"Well, in fact, I'd say their skills are lower than average. Because now if we are talking about information search for assignments, for instance, research or something like that, few of them know how use databases. I am referring to first year, second year students. Eh... They discover Google Scholar, but they are not skilful at using it, their use is very sporadic, or they don't use all the functions. The major search engine that they know is Google. And in fact they search for everything in Google. And thus, I'd say, their possibilities are rather narrowed"* (P16T).

Knowing only the surface of Google should become a major concern. As it has already been noted above, it is not the aim here to show that the use of Google is a hindrance to effective search. On the contrary, if used **critically**, **skilfully** and **knowingly**, Google and all its tools offer great possibilities: *"I think Google has advantages. I like Google Scholar very much, very much. And I you look at their development since... well I couldn't tell you the exact year... but I myself have been using it since 2008. Before there was... But now there are so many tools that facilitate search. I can look up citations, I can find most relevant articles that are related to a particular article"* (P16T). Though using personal data for commercial purposes, Google does offer in return free access to so much information that a media literate user can indeed find numerous high-quality sources. Conversely, some academic databases are so expansive and expensive that their commercialization is also seen by expert users as some kind of a nuisance than the popular Google: *"For some reason, high quality is related with high cost. Personally, if I see the Elsevier logo, I feel kind of dislike because, well, it is really a big publisher that feeds itself on intellectual production for which its creator receives nothing*

(well, in fact he or she just meets the publishing requirements of some university X). While Elsevier makes money for itself because these articles cost some tens or hundreds of dollars. So... I instantly see it as a hindrance to scientific progress and, by the way, certain corporate activity that irritates me. Especially when I am not paid a cent for publishing there" (P16T). Many established and prestigious academic databases offering quality information are not less commercialized than Google. Again, the diversity of sources is always an advantage for the user on condition that the user is media literate. As one of the interviewees put it, there is some tense competition going on between commercial and open databases: *"So I believe that this competition [between commercial databases and open databases] will increase. The paid databases will survive because anyway they have to be administered and in fact you have to pay for everything in this world. But I am also convinced that free access databases will become more important. Undoubtedly. Because one day the academic world will realise that it is working for free. This already happens. Because if you do not get patent for you invention, do not publish your research results, do not establish an enterprise for your research or something like that, then you... you are working in vain. In vain. Because you do not produce anything. No reward for you. Meanwhile the publisher who owns your work earns money from it. And under current market conditions I'd say this model will not last long. So if only universities had political will and would contribute to improvement and development of open databases, we would achieve much better quality and in the long run access to quality information would not cost that much. Because we would not have to subscribe to that many expensive databases and we could raise the issue of creating more quality content and not think about solving the financial difficulties caused by these expenses"* (P16T). As it has already been pointed out above, it is necessary to find the balance between the expenses allotted to access quality information and the possibilities offered for free, and it is necessary to know more about the tools and sources to become an aware and well-informed user of information and communication media.

One of the essential ways to tackle the uncertainties and tensions faced by information users today is ***constant comparing*** of information in diverse sources. This is no easy task, however: *"I always tell my students that they have to find several sources to compare answers to their question. I am appalled when they cite research work, for example, I've just had this case of a bachelor paper where the student cited several Lithuanian authors writing on working with programmes with point vector graphics. What they write in their articles is total nonsense. And... when I was writing my review I was thinking about what I should say: should I criticize the student for choosing poor article or should I state openly that the journal is publishing low quality papers. So I believe students are misled by the quality of research production. Because we tell them to use databases but do not mention that even these databases sometimes publish all sorts of things"* (P16T). Thus even having done the comparing, students may still face the pitfall of choosing poor quality sources because not all databases offer only high-quality information. Therefore, teacher guidance in source selection and source criticism is vital for students today. Knowing that simple Google search and Wikipedia are the starting steps for most learners today, teachers have to be particularly cautious and concerned about the source selection done by students: *"I always have Google [as a search engine] and don't change it. Then you can find the information to start with in*

Wikipedia, but maybe... in Spain... I realised this when I was abroad, when I was an Erasmus student. I think that I learnt how to find information when I was in Wales. They [the teachers there] taught me how to find information, how to use bibliography [of articles]" (P18S).

What is more, a mere distinction between simple search and referring to the databases subscribed by one's institution is not enough. Sometimes a student may come across a paper that he or she sees as best for an assignment but that is not subscribed to by their library: *"But the problem again is that the university has some agreements [subscribes to some databases] where articles undergo reviewing, but not others. And I think we need more agreements [subscriptions to databases]. When you find an article that you think might be best for you but you don't have access because you have to pay. As a student, I cannot do this"* (P18S). The expensiveness of commercial databases is often related with high-quality; however, the nature of the Internet seems to impose its own conditions on the ways we prefer to search for information. With the advent of the Internet and the resulting over-abundance of information, users have come to perceive that everything can be found on the Internet for free. Any necessity to pay for access to wanted information has become to be seen as a nuisance and hindrance; thus information searching today is easily related with simple search offering almost limitless free sources in contrast to the paid access that is in many individual cases discarded.

So Google offers the window to the realm of huge amounts of information for free for those who are unwilling or unable to pay for the access. However, many information searching attempts end with the first page of Google search results. This is why conscientious use of one's favourite search engine is vital. More advanced students adopt smarter strategies of searching though they admit knowing little about their preferred search engine: *"I haven't thought about who's behind the Google world. Well, but it has to be someone for sure. With this information and selecting information for us. But again we should be more autonomous. We should... To me, I don't just... read the first page and then that's it. I even try to go more than the first page. To page 3. And sometimes I even change to page 5. Because... yeah, sometimes I don't find information. It may be [found on the] last page. I don't know why. It's just a matter of... because I have been looking for information a lot of times in my life....But I think that all the people [behind Google]... they are selecting information we want to find. But we may too select our information when we go back [deeper]..."* (P18S). Though this interviewee admits "not thinking about who's behind the Google world", she switches search result pages in attempts to come across more diverse information. Importantly, she does not follow the common belief that the best results are the first results in Google search. In fact nobody knows exactly how Google search algorithms select information for us; therefore, it may be effective to try switching pages as the interviewee does.

In short, the aim of this section was to describe the diverse angles of looking at the most common search engine employed by learners in this research. Leaving such dual descriptors as "good" or "bad" aside, this section evidences the complexity of information search. What is always important, though, is our becoming aware of the habitual ways of how we spontaneously search for information and the tools we use to build out knowledge about the world and getting used to analyse them, to re-think them and improve them on the basis of our knowledge about them. The following lengthy quotation is from an interview

with a librarian who has researched Google products: *"Google offers great help. [...] It's no way a trash bin. Think about their strategy of buying best products. For instance, youtube. You can find anything there. Learning to search databases. Using academic social networks. Or you have little time and you don't know how to use something, for instance. You'll find it all in youtube. It is the starting point for everything: make-up techniques for girls, all types of advice. A great source starting with a housewife and ending with a researcher and professor. No doubt. I have myself recommended using it. A colleague of mine was writing a project. A budget of millions. He was satisfied, he told me it was a great help. He said he had never thought that one day he would be consulting youtube. [...] He was looking for most recent tendencies to describe in the application of that project. He found much information about the things that are important nowadays. And then there are various scientific videos there as well. Yes, youtube is a very useful thing. [...] But you have to examine your source. You can find videos explaining you how to select sources. Or search databases. Databases themselves use youtube to instruct users. Assess your source – who prepared the information? Recommendations? Well, they are a dark forest. You can find all sorts of things there. But do filtering. Dig as deep as you can into your source. But this [using filters] has to be taught at school. And critical thinking as well. You have to appraise skilfully a TV programme, for example. Propaganda can be found everywhere. But this has to be taught at school. [...] I mean the basics. It is a must"* (P12L). Importantly, she points out that any search a person does has to be accompanied by a critical source appraisal. Besides, as complicated as it may seem, media education has to be started as early as possible. Media literacy is never an accomplished outcome: it is an outcome that has to be tailored continuously because of the rapidness of the changes experienced by people in the technologized and extensively more mediated world.

The Wikipedia paradox

Wikipedia is not considered to be a reliable source because it varies a lot according to the **quality** of articles and because it is crowd-sourced and can be edited by anyone. This has been admitted by many research participants students; however, their initial states about distrusting Wikipedia notwithstanding, the interviewees also admit that they still resort to Wikipedia sometimes, especially when tackling a seemingly difficult or unknown topic for the first time: *"I don't normally start with the first [Google search result] because the first is usually either Wikipedia or something like that. Well, it's quite difficult to explain. Well... in the beginning you can read it just to get an idea of what it all is about if you need to research an unfamiliar topic. Wikipedia may help a little. But if you need really good information then you search for websites that are... well, official or of organizations, but not, not blogs or else"* (P4S). Just like this research participant, other interviewees explain their use of Wikipedia in a similar vein: *"If it is the very start then... then I have a look at Wikipedia. For the first impression. But otherwise I try to read books recommended by teachers or consult my text-books. I have used databases a little bit, but... no more than 5 times so far"* (P7S). *"It depends on my query very much, the information I am searching for. Because if, for example, I do not know anything about my question, then it is more convenient to draw a general view, when you just find such simple points in Wikipedia"* (P6S). *"Of course, I discard all those 'validity-lacking' sites such as Wikipedia because... well... Wikipedia is a popular site and it*

doesn't always haves such... it's just some basic information. But then you can always search in Google Scholar or whatever it is called..." (P6S).

It is often difficult for students to explain why sources like Wikipedia are not considered to be trustworthy. The vagueness of defining a source as not reliable in terms of "Wikipedia or something like that" shows that students are aware of the reliability features only on a very basic level. This is why, consequently, they resort to Wikipedia in certain cases. The very fact of resorting to Wikipedia for **initial orientation** is not something that should be scorned though. As it was stressed in the previous section on the Google default, the essential thing is getting to know one's tools. As regards the use of Wikipedia in particular, we should be very cautious about starting to build our knowledge about a topic using the sole source such as Wikipedia. Granting too much power to Google or Wikipedia to construct our worldviews should be knowingly weighed.

The ubiquity of the Internet and the virtual realm of all kinds of information have resulted in the **dispersal of a few long-established and authoritative sources** (such as a teacher and an educational institution) into multiple and diverse universe of online information repositories: "*Mh... I often use Wikipedia as a source. Also, I often read texts written by other people, their essays, or research work. We often resort to opinion of other people, their experience, sometimes newspaper articles. Mh... I don't know...*" (P11S).

Though students admit distrusting Wikipedia and similar sources, they are prone to use it nevertheless. When asked to explain why they still resort to Wikipedia, the interviewee in the following extract stated trusting Wikipedia for particular types of information: "*When can you trust Wikipedia? Not always what is written there is absolute truth, but, for example, if you are searching for some information about writers or something similar, then usually everything there is totally true because not everyone has enough knowledge to change some information there. And... it is quite difficult to change information in Wikipedia, very complicated now. If you erase some comma where it is needed you are blocked and you cannot edit it because they see that you are incompetent to do it*" (P11S). In other words, knowing about the technicalities of editing information in Wikipedia grants even more trust to it. Though the editing policy of Wikipedia has changed in the long run, it is still necessary to use its information cautiously. Trusting Wikipedia for particular types of information, for example, biographies, can be problematic. The following excerpt also evidences the use of Wikipedia for information that is seen as general and well-known such as information about a film: "*You can't absolutely trust Wikipedia. But, to tell you the truth, I use Wikipedia. [...] Well, for example, if it is information about a film, you can trust it 100 percent. Because it is about a film. Everyone has seen it, everyone knows so it must be truth. But if it is some theoretical material... then I don't trust Wikipedia. Then I try to find some theory text-book. Or, as I've told you, Google Scholar. You can find more information there*" (P11S). Distrusting Wikipedia for more serious content though is also stated by this interviewee. She states resorting to text-books or Google Scholar for this kind of information. However, the close proximity of Wikipedia in one's Google search results means that it is easy to access and it seems to be accessed quite often because of that and because it provides one with quick and structured information about one's query in one place (for example, in Contents sections of Wikipedia articles).

Though distinguishing between the types of information that are more reliable or less reliable is one of the ways resorted to by the Wikipedia users in tackling the reliability issue, the need to cross-check information has to be stressed in any case.

What has emerged as striking about the use of Wikipedia for informing oneself is referred to in this research as *the Wikipedia paradox*: admitting that Wikipedia lacks trustworthiness entails conceding subsequently to use Wikipedia at least in certain cases. Evidently, students are prone to use Wikipedia (though may not admit that readily) because of its seeming simplicity and proximity in the first Google search results. Therefore, using Wikipedia for drafting some initial framework to start one's research into a topic has been cited as the major motive for resorting to Wikipedia (sometimes interviewees admitted relying on Wikipedia articles' Contents sections for orienting themselves about their query (P11S).

To conclude with what has been said about *the Wikipedia paradox* evidenced by the research data, it has to be noted that one observed way of tackling the trustworthiness issue has been making the distinction between the types of information that can be trusted more than other types of information, i.e. making the distinction between the types of questions that can be answered by Wikipedia: *"Speaking of simple problems, I agree that collective intelligence works. But speaking of something more complex, deeper, something requiring expert knowledge, the collective solution does not work"* (P16T). An important issue to consider thus in media education is the awareness about the proneness of the collectively made solution to entail potential errors.

Defining criteria of critical appraisal of information (encountering the unexpected, teacher guidance)

Critical thinking as a process and ability also needs re-thinking because of the impact of the Internet on learners' information searching habits. The Internet has opened up ways to access much information; however, it has also brought with it some element of unwitting spontaneity in searching information. Though students readily admit the importance of critical thinking in selecting their sources and appraising information, there is some kind of inconsistency between their beliefs and their actual behaviour online. Therefore, this section is aimed at trying to supplement the long-established conceptions of what critical thinking implies with some nuances pertinent to the actual behaviour of students in their knowledge construction under the impact of media: *"They, so to say, don't weigh the significance of sources. Because almost everything found on the Internet is taken as truth as if spontaneously. So I think that this inability to compare [information] contradicts their states about their [applying] critical thinking. Because critical thinking is acquired through practice"* (P16T). Critical thinking is normally defined in most broad terms as an analytical ability and an ability to weigh up diverse sources. However, this rather general definition has to be revisited under the conditions of the constant presence of the Internet in an individual's environment. This research has been focusing much on the observed inconsistency between the states of the learners about the importance of critical thinking and their actual behaviour with information. The following extracts from the interviewees with the research participants reflect how an ordinary user and learner in fact engages in appraisal of information he or she encounters

when searching for needed information via various media and gadgets he or she uses daily. Though the aspects of critical appraisal of information in educational settings that are described here are indeed variations of many classical criteria, they are nevertheless very telling due to the minor and often hidden implications as, for example, in stating orderliness of a text (which may resemble accuracy in classical terms) to be one of the criteria applied in critical appraisal of information. ***Orderliness*** is defined as "nice language", author's "caring about" the reader, and "usefulness" of a text: *"Well, speaking of reliability, you have to look at the text itself. How do I decide whether a text is **useful**? Well... it is a little bit... how should I put it... [thinking for some time] it is just several things. In fact, I think that orderliness of a text is really important. **Nice language**. It means a lot to me because it shows whether a person who created the information **cares about** the reader, or is it just some information created without thinking much what happens with it on the Internet. It is really difficult to discern which information is more **useful** and which... where you easily see that it's just some subjective thing and there are some errors or punctuation is disorderly. It tells me a lot"* (P4S). An intricate aspect to consider is that of the "usefulness" of a text that has emerged as a multi-layered (and subjective) notion related to the "orderliness" of a text (that can be described in more or less objective terms such as punctuation, spelling, appropriate language, etc.).

The distinction between subjectivity and objectivity is not that clear as it may seem on the surface because the new media, in particular social networking, have granted much more weight to the subjectivity (reliance on individual and subjective viewpoints of others) in informing oneself and in knowledge construction. Basically, critical thinking is seen as being able to distinguish between subjective opinion and factual information. However, ***supposedly rejecting personal views, the interviewees admitted taking them into consideration nevertheless***: *"I sometimes read blogs. It depends on the type of information you are searching for. But I... don't want to concentrate on other people's subjective opinions"* (P4S). "Not wanting to concentrate on other people's subjective opinions" implies certain tension that arises because of knowing about the necessity to distinguish between fact and opinion and the proneness of the learner (who is constantly immersed in heavily mediated reality in which individual viewpoints have saturated information flows and in which personal opinion has acquired much more significance than before the advent of social networks) to rely on information accessed on diverse sources on the Internet and in social networks in particular.

The first two nuances pertinent to the perceptions about critical appraisal that have been just mentioned (i.e. orderliness and the duality of dealing with the subjective) merge in an intricate way as it is implied by the following quotation: *"I believe you have to read at least several sources. To compare. There's no other way, I think. If you need that information, if you want to get deeper, you have to read at least several sources and to compare what is really... to choose what you like, what is useful to you, and so on. There is no other way, I think"* (P4S). Comparing information from different sources is another basic element in critical appraisal of information. However, ***comparing*** is reported as ***related to choosing what you like because you see it as useful***. Importantly, the interviewee here relates comparing be done in order to choose "what you like, what is useful to you". "Liking" is a very subjective criterion to apply. Being "useful" is less subjective but still entails much subjectivity. Speaking in more general terms, students are very pragmatic in selecting sources through

comparing: the aim of comparing is regarded to be selection of that information which one likes and sees as useful for one's purposes. Presumably, this is evidence to how difficult it has become to define critical appraisal under the conditions of social networks, overabundance of "free-range" Internet information, and the erasing boundaries between original and secondary sources or authentic information and information that has undergone undiscernible "processing" of multiple minds online.

Furthermore, clearly ***structuring information hierarchy*** for students is seen by the interviewee quoted below as a basis for source selection in his course: *"I have three basic rules for my students. The first place to look for information is reviewed databases that are indexed. This serves as quality guarantee. Well, though some of them cost money, the university subscribes to them. So I am sure that their information corresponds to the requirements of scientific research and the formal criteria that are set for research production. Of course, the second stage is public institutions and institutional websites, that is, websites of state or international institutions and their reports. In that case I trust them. And the third level is the wide flows of the Internet. But this information is only optional, that is, it is not the main information. I will never formulate an assignment the answer to which is found in some undefined non-reviewed place on the Internet. Because in that case you cannot be sure about its authenticity, reliability, or at least unity or truthfulness"* (P5T). Strictly distinguishing between institutional info and prestigious databases vs. "flows of the Internet" implies that non-institutional free "information flows" on the Internet are contrasted with institution (and structure) as a quality guarantee. Thus the value of information is measured against belonging to the institutional establishment or not. Evidently, this indicates the struggles of an individual to ground one's knowledge on what has been long related with trustworthiness and stability. The criteria that are related with institutional information are indicated to be ***authenticity, reliability, cohesion and coherence,*** and ***truthfulness***. In addition, this implies a teacher's (who represents an institution) strategy for coping with the re-structuring that occurred in established and societally acknowledged sources of knowledge delivery because of the increasing dispersal of the sources since the advent of the Internet.

Both teachers and students are encountering this dispersal of long-established knowledge sources; however, there is some discrepancy in how teachers are tackling this issue: *"It [bibliography list] is one of the requirements of our presentations. But some teachers do pay attention to what you include there. And if they notice a book then they look more attentively. Because, you see, they cannot know all the diversity of information in the Internet space and all the subtleties, just like we ourselves do not know it all"* (P9S). From the student's perspective, most teachers pay attention to bibliography lists compiled by students only formally, as a required part of an assignment. Therefore, the interviewee sees the occasional attentiveness of teachers to bibliography lists as an exception where traditional books are particularly valued. Presumably this is why students state to consult teachers about bibliography rarely: *"Well... sometimes I think it's useful to consult about what I should stress. But as regards bibliography, I consult about it very rarely"* (P9S).

As in many points made with the research data in this work, this is also evidence to certain tensions experienced by the users of media for information search. This is also evidence to what has been termed as "symbiosis" previously: the tradition is undergoing some

transformations as regards the ways we are constructing our knowledge nowadays. The dispersal of the traditional knowledge "nuclei" into the virtual space and their transformations have loosened teachers' "grip" on information flows.

Probably the most difficult part of critical appraisal of information is being able to **weigh the significance of opposing viewpoints.** This task is even more difficult because media have brought to the fore the individual and personal opinion and thus discerning fact from opinion is made even more complicated: *"Personal blogs are very popular now. Every specialist now has his or her own blog. But we should never forget that blogs are not reviewed and nobody can oppose to the texts of the author. Therefore, a blog is always just a viewpoint of one person. You cannot rely just on it. Such kind of information is not good"* (P5T). From and academic institutional standpoint, therefore, the use of institutionally prestigious sources such as reviewed academic journals, are imposed and promulgated as the building rocks of reliable knowledge.

Finding answers to one's questions is always guided by the urge to do the search as quickly as possible and **with the least effort possible**. Opting for simplicity (that has already been discussed previously) is also at work in critical appraisal of information: *"Well, if I have a question and if that question is very clear, and if I find an answer to the question that is very concrete in a text, and if the text is written not by some student or somebody like that but by some professor... Well... I think the person has to be well... **qualified**... Well it cannot be just some subjective opinion of somebody. [...] But yes, [relying on] the information can be quite slippery if you do not know who's behind that title of professor or doctor next to his name. But still I trust more this kind of person because there is some **probability** that he is qualified in the field. Finally, there is this Reddit.com site that got its name from "I've already read it" where people... well if you type in a keyword or phrase in your search you get the results according to the number of people who already have read a text. You click on the thumb-up if this information is **useful**. So it is kind of... an interesting way of searching"* (P6S). Firstly, the interviewee states to seek concreteness in a source. Critical appraisal is done minimally in this case: evaluating qualifications of an author is tentative because mere reliance on titles next to an author's name can be deceptive if information is found in some sources of dubious reliability. Interestingly, the proofs of trustworthiness are not being searched very comprehensively: the interviewee relies on "some probability" of an author being qualified. What is more, appraisal of quality of information is done using a web content rating website that is trusted by the interviewee relies "on the number of people who already have read a text". The appraisal chain does not end there either: the interviewee herself rates the information if she finds it "useful". The "usefulness" criteria emerges once and again in a number of interviews. It is probable, therefore, that critical appraisal of information is also guided by very pragmatic intrinsic motivations of learners. Therefore, **the pragmatic criterion of usefulness** is applied in deciding over credibility of information: *"It depends on the assignment. If I see that there is an answer to my question, then I try to stick to the source and take it as a basis"* (P10S).

Another criterion for deciding over reliability is **identifying and checking author information**: *"The articles indicate the names of their authors. So you can look them up on the Internet... to find out something about them. To see whether the source is reliable or not"* (P11S). The interviewee in the following excerpt admits doing even more in deciding what

information can be trusted: she not merely relies on the name being indicated but goes further, i.e. looks for more information about an author to check the author's expertise, looks up the date of a publication and even analyses his or her bibliography: *"I think it depends as regards Google. As I said before, you cannot rely on something that is written by someone who isn't well known. I mean I look for how old the information is and see if this person [the author] is an expert in the field or not. Or you find the bibliography and you can go to another page"* (P18S). Thus, more advanced students distrust vague authorship and make several steps in appraising information: *"Yes, I search for more information about the author. If there is someone who I want to cite when writing about my topic, as I said before, I see if this person does not write just whatever [i.e. is an expert]"* (P18S).

As regards the use of Wikipedia, which has also been discussed previously in more detail, its recurrence in the interviews from time to time also evidences the importance of the source in ordinary use despite of the negative connotations that its use entails. The interviewee below discards Wikipedia as a source to be trusted because of the absence of information regarding authorship. However, importantly, in this excerpt the interviewee concedes that she consults Wikipedia nevertheless for specific issues, i.e. its articles' bibliography lists. *"[I look up the name of an author] almost every time. That's why I don't use Wikipedia. Maybe to get a general idea or to make my own bibliography list. Because in Wikipedia they have something like the author, bibliography, all this information. And then you look for this information in other webpages. But not in Wikipedia. Because you cannot trust [it]"* (P18S). Despite discarding Wikipedia as a not trustworthy source, the interviewee admits making the initial step in her search in Wikipedia. The use of Wikipedia thus goes on unreferenced. Therefore, this is an important issue to be aware of: in this way, the user unwittingly allows sources like Wikipedia to lay the ground for the learner's construction of knowledge about the researched reality. It has to be noted again, though, that it is not the aim of this thesis to determine how trustworthy sources like Wikipedia can be: despite their obvious fallacies, the impact of collective intelligence on knowledge construction is likely to become more significant because the very media that have penetrated our lives impose collectivism through the tools of information sharing and the general principles of functioning of these media when contributions of subjective individual viewpoints are accumulated in a collective "beehive" and are subsequently spread in the virtual space.

The indefinability of authorship of much of information on the Internet has produced a perception that this information is free and can be used in any preferred way; and, possibly, it is consequently and, most probably, unintentionally, perceived as one's own ideas. This aspect is related to how students approach plagiarizing and how they define it: *"Every time there is more talk about plagiarizing. Teaching about ir from early age. [...] I am overwhelmed by what students see as original ideas. It seems to them quite natural to use ideas found somewhere on the Internet by copy-pasting and come to perceive them as their own"* (P14L). Thus copy-pasting seems to exist in two guises: firstly, when it is an obvious infringement of authorship rights, and, secondly, a mere technicality (not necessarily maliciously intended as plagiarizing) and an unperceived consequence of seeing much of the Internet information as belonging to everyone, i.e. free, because of the indefinability of its authorship. The latter perception is a result of the symbiosis of the human mind and the principles

of creating and distributing content on the Internet: *"We all know that it is very simple to publish your ideas on the Internet and it is not obligatory to indicate your name if it is not for serious research publication. So, no problems: you do not steal anything. You just say: well, I read it somewhere, I found it somewhere. However, research publishing requires indicating the primary source and this is when a student has to decide when he finds some seemingly useful information that could be used as argument in his written assignment supporting his position. But he cannot indicate the author. It is not his idea, but the author cannot be identified. You cannot reference the source as just something found online"* (P5T). Thus coping with obscurity of authorship is an important element of critical appraisal of information as well.

Reliance on institutional information has also emerged as a multi-faceted criterion because, as the interviewee in the excerpt below states, mere reliance on the fact that some information is found in an established institutional source reduces critical thinking: *"Critical thinking is not that strong when you are searching reliable sources from the reading lists because I think they are 100 percent reliable. I do not have to switch my critical thinking on when reading them. Because I absolutely trust the information and believe that it is reliable. But when browsing certain portals I always switch critical thinking on because the competences that I already have, for example of comparing things, they produce the reaction of rejection: what is useful or not useful, reliable or not reliable"* (P9S). The distinction here is made between presumably reliable sources from reading lists and Internet portals. Critical thinking is seen by this interviewee as something that can be deliberately controlled: "switched on" when necessary according to the user. The interviewee defines her way of selecting information by comparing and states using such criteria for discarding information as rejecting not useful and not reliable information. Here again criteria like "useful" and "reliable" are used almost interchangeably. Seeing **reliability as usefulness** is evidence to very subtle, intrinsic and difficult to account for approaches used by users. In other words, we have become accustomed to use media almost unwittingly. Therefore, teachers have to be concerned about raising the learners' awareness about media and their impact on learners' habits. The most common approach adopted by teachers seems to be the following: *"Our teacher always reminds us that we cannot trust information found in Google. We can only trust the information found in official journals or databases because it is true information that won't mislead us"* (P11S).

Accounts of what critical appraisal of information implies often revolve around identifying personal steps and stages in information search as it is evidenced by the following excerpts from several interviews: *"Usually I only look for information on the Internet. Firstly in Google or Google Books..."* (P10S). *"Usually the most needed results are in the first pages. When you look at further pages, you rarely find anything there. The further you go the less chances you have to find something that really suits you"* (P11S). *"If Google search produces many results and you do not know what to do, I never go further than the first page. Because the following pages contain more irrelevant information the further you go. Because Google puts first the most visited, the most popular pages. And by looking at the first page search results you decide over what is logical or what seems substantiated. Anyway, you already know some theory, you can either agree or disagree. Well, I have never had any problems with encountering that many search results. Because, well, you have to learn to manage all that information"*

(P11S). The following excerpt summarizes in detail many of the aspects that have been laid out so far in this section regarding the steps students make in sorting out their information: *"If you suspect that some analysis of a theory is erroneous, well, there are many other articles that can be found in various Internet websites. You can even go to Google Scholar and find there many books and articles. And our university has its databases, electronic and library. You can find articles in our library"* (P11S). Another research participant describes her way of searching and selecting in a similar vein: *"I think that we usually search Google Scholar when looking for articles. And we don't use Wikipedia. We read something. And we surf the net, read different web pages. In my case, I always look for official sites or I look for information in Google Scholar. Or, if I have an article, I try to find out if it is published in a reviewed journal. Or, I don't know, just look at their bibliography. Find, so to say, lots of information. And then I just select the one that is **useful** and the one that is not, I think. But always for official sites. And I use Google Scholar when I want to find articles"* (P18S). The steps stated here are: discarding Wikipedia (though, as it has already been pointed out, discarding Wikipedia often implies skimming Wikipedia before engaging in more advanced search); searching Google Scholar, surfing the Internet, looking for official websites and reviewed journals, analysing article bibliographies, trying to find much information and, subsequently, selecting "**useful**" sources. The steps laid out in this excerpt can be possibly regarded as certain (though rather vague) features of what "being useful" implies for the interviewees.

From the teacher's perspective, knowing how to search for information is the basic competency students need. Knowing how to do an advanced search effectively is a necessary pre-condition for engaging in subsequent more sophisticated critical appraisal of information that involves metacognition: *"The first thing I tell my students is that we not only have to know the title of the journal. What journal? OK. Searching by key words, applying search terms. Because I have also realized that they do not know how to search on the Internet. They search using directly the words from the title. But they do not know how to do advanced search: to use quotation marks, connectors like AND or OR, filter by date. So this is the basic competency they need – knowing how to search for information. Once you do this, enters critical appraisal that consists of finding out the prestige of the journal, of the author"* (P19T). Lacking skills of advanced search results in using information indiscriminately. One more criterion mentioned by the interviewee below regarding information selection is the distinction between what is "**valuable**" and what is "**valueless**". This distinction is little clearer than the vagueness of the distinction between useful and useless information: *"There is one more important thing regarding information search. Living in information saturated world means that appropriate critical appraisal of information revolves around what is really **valuable** and **valueless**. Being valuable refers not only what gives you this practical but rather... how should I put it... better formulate... well practical knowledge is of course important. But you knowledge has to be "**weighed**". Not everything has to be taken for granted, something to fall for"* (P14L). As with the distinction between useful and useless, the distinction between valuable and valueless is also very pragmatic and difficult to define because it is an intrinsic and subjective criterion: in the interviewee's terms, "**valuable**" is practical and weighed knowledge that is not taken for granted in order to avoid "falling for". What is more, learning to **discern figurative meaning** and to **de-code** it is also indicated as potentially related

to critical thinking as well: *"We have to teach students to comprehend figurative meaning. I think it is related to critical thinking as well"* (P14L).

Last but not least, an essential element of engaging in a truly critical appraisal of information is ***strategic encountering of contradictory or unexpected info***. Naturally, a person is more prone to follow the information that supports his or her views because it comfortably reinforces prior beliefs and does not cause any anxiety or irritation. Therefore, an important element of a full-fledged critical appraisal of information is awareness and a trained skill of paying attention to and analysing information that is opposite or different from one's held views. The common way of one-sided selection of information that is considered as secure (i.e., unchallenging one's beliefs) is reflected in the following excerpt: *"You have to search and look for the things that are repeated more often in certain sources. And then, when I decide over what I choose, I am guided by this information"* (P10S). This way of facing contradictory information is based on looking for repetitions in several sources and subsequently following this secured path. Encountering belief-shattering information can be disturbing: *"I always enjoy the moments when I find out something interesting. Something I indeed like very much. And then later when I see that the information was wrong... well I feel kind of upset. It is always difficult to encounter prior-belief-shattering information. And this is when critical thinking turns out very important, when you critically assess the information you encounter, the information you find. Because if I encounter information that substantiates what I read previously, then it is easy to tick it as 'yes', 'yes', 'yes'. But when you are faced with something that tells you the opposite, then it is important to find out more about it. And then you can find out the truth only by looking at it from a critical position. And choose your position"* (P6S). Though confronting prior-belief-shattering information can be "upsetting", this interviewee admits the importance of tackling in some way opposing viewpoints instead of merely rejecting them unwittingly as in the following quotation describing how a totally opposite viewpoint is dealt with: *"I discard it. Of course, it could be true information, It could be that I am mistaken. But usually I discard it. Then I start looking for what seems right from my viewpoint. What I need"* (P10S). Another interviewee describes her approach in a similar way: *"Usually it's quite difficult. I read it and see whether I agree or disagree. And then this is how I decide: it either suits me or doesn't suit. But making the right decision is rather difficult"* (P11S). Importantly, appraising information negatively – if it is contrary to one's held views – is related with the emotions experienced at facing it. It possibly evidences the fact that media have brought much of pragmatism ("either it suits me or doesn't suit") into our decision-making as regards information appraisal and selection, and that, despite admitting the importance of critical thinking, the long-established criteria of what critical thinking and critical appraisal implies have become blurred under the conditions imposed by the pragmatism of media.

The pitfalls of rejecting opposing information are losing depth of vision and illusionary satisfaction with easy accessibility to information: *"I'd say it is a problem related with certain generational context. With all those social networks. And in general with the culture of quick consumption of information. The need or the necessity to analyse a source deeper has disappeared"* (P16T). From the teacher's perspective, analysing sources deeper is not considered as needful by students in all this abundance of information where one can easily find ample sources to support one's long-held views.

Fostering critical thinking skills and teaching about strategies of critical appraisal of information has to be made more visible by talking about it in any field of studies. The research interviewees did not attend any special critical thinking courses or training; however, they reported scarce cases that they considered as cases of teachers' attempts of fostering critical thinking in students: *"Well, we have talked about critical thinking, fostering critical thinking when I was a student. That we need to gather information and then to reflect. But I haven't had any courses on how to achieve this goal. But I think that critical thinking must be trained from childhood. I don't know if there is any such subject. Here, in the faculty, we haven't been trained. As an Erasmus student, when I was studying literature [abroad], I used to read novels or plays and then we had seminars every week and we just talked. Then we were critical thinkers of what we have read. But it was something unconscious. I haven't realized it till now that the teacher was just asking for our opinion, was trying to make us critical thinkers. But this is not something that you can call Step 1, Step 2. It's something that's just behind the classes. Yes, teachers try doing it in that way. But there is no specific course on critical thinking"* (P18S). Evidently, critical thinking and critical appraisal of information is learned through practice in students' daily activities.

Decision-making as a specific type of thinking strategy within critical appraisal is also seen as an ingrained element of the whole process of critical appraisal: *"What we need is the capacity to make decisions. I mean to decide what I have to search for and what I don't have to search for. Once I decide over this, I start thinking critically. And, in addition, I know that I prefer adequate sources such as official webpages, websites of prestigious journals, articles from prestigious journals but not just anything available online"* (P19T). Decision-making in selecting appropriate information is seen as stemming from clear distinction between sources to be searched and sources to be discarded. However, what has to be taken into consideration is the students' proneness to readily discard sources that seem to oppose their held views that has been just discussed.

To sum it up, the research data possibly evidences that the criteria of critical appraisal of information and critical thinking in information selection have become rather pragmatic because of the impact of media. Besides, as always with media, the time available and the constantly experienced lack of time also strongly impact information choice by individual learners. Critical thinking may depend on the perception of the importance of an assignment and can weaken when the sources used are considered to be trustworthy from start. Finally, there is always a very strong element of subjectivity in critical appraisal of information: it is evident in applying such pragmatic and subjective criteria in information selection as usefulness of information.

Re-thinking library

The traditional institutional library has long lost its function as the only repository of external knowledge: *"Library is losing the role of the only source... because it is also networked. Library has become only an environment where one can comfortably learn. That's why a student can choose. If one finds it more convenient to study at home, one can just as easily access the library from home. As simple as that."* (P5T) As often with a learner in the densely mediated environment, he or she is trying to enjoy as much comfort as possible that often means over-

coming difficulties implied by physical distance. Therefore, a library (as a societal institution in most general terms) has faced the need to make efforts to reach the user – something that occurred in the opposite direction before the advent of the Internet.

Modern library has come up with many ways to reach its user in meeting today's needs such as learner's **orienting** amidst dense information flows: *"In the beginning, during the first month there were courses organized by the library. I went there, but in the beginning I did not use much what I learnt. And our methodology teacher reminded us once again in semester 2 how to use databases. And she just gave as an assignment and so I started using them"* (P7S). Learning to orient amidst information flows occurs gradually as guided attempts to raise awareness of many individuals: the learner, the librarian, and the teacher. Working with information resources requires much continuous practice: *"Librarians once came to inform us about how to search for books for our bachelor papers and other written assignments. I have never thought that it can be that difficult. To orient in this sea of information and the whole system, the whole space. And I really took notes very carefully. But if I had to do very extensive research now I would have to go for a consultation once again"* (P9S). The co-operation of librarians and teachers is a vitally important part of the entire learning process in trying to help the learner to find the balance between the difficult to defy popularity of Google in information search and the long-trusted and tested resources such as the library.

Therefore, learning to use resources effectively and to select appropriate sources nowadays has to **compete with the spontaneous choices** such as symbiotic opting for basic Google search: *"Usually it's basically Google. Always. That's what I use... Eh... And, of course, the library, but library... well, library when there is no other way"* (P10S). *"And sometimes there is no information in the library. Much of it is already... well, not much but certain information is outdated. You won't get the newest information in the library"* (P10S). As regards library, this symbiotic opting for basic Google search may be rooted in the pre-conception of learners about library resources being outdated versus Internet information being constantly updated. *"The thing is that library is not always updated and you cannot find everything"* (P18S). However, misinterpreting the potential of library (in seeing it as more regressed in terms of information updates) is an unsubstantiated and deceptive pre-conception for the mere fact that one of the essential criteria of critical appraisal of information is filtering information by date because, for instance, there are innumerable websites that are simply dead as they have long ceased to be updated.

Moreover, library is commonly perceived as a physical space of physical resources and thus delimited in scope of search: *"I have never used library as a source for information search"* (P11S). "Information search" for this interviewee implies engaging in much wider in scope and much closer physically Google search. Seeing library as limited because of its supposed physicality resulting in certain limitations of resources is another common misconception about the library because in fact a modern library has been successfully extending into the virtual realm a significant part of its existence, activities, functions and resources.

Academic libraries, therefore, have been looking for the ways to **deal with common misconceptions** of people searching for information and, as regards students in particular, have been trying to come up with certain services that would match their users' needs, make their information search more efficient, and facilitate learning to conduct an academically appro-

priate information search: *"We offer various services. For example, we can draw up a strategy for information search. It is a very good thing. For a person who is unable to do it on his own. A student should be able to do that on his own, but since nothing about that is taught at secondary schools, I see this information searching strategy as a very good thing. It is different from compilation of a bibliography list. Because a ready bibliography list does not teach you anything. With the strategy you have to do everything yourself. We are not experts in every field, we can only draw guidelines to start with"* (P12L). An important point to be made regarding the contribution a librarian can make in developing information searching and critical appraisal skills concerns the so-called specialized thematic librarians. Academic librarians have been facing the need to deal with the rising importance of inter-disciplinarity and multi-disciplinarity in many fields of human activities nowadays: *"Because you are investigating your field and you know what sources are available that you can offer. Of course, a student may not know them. A teacher can suggest the same sources, of course. However, teachers do not have that much time for information search as a librarian. Because they have to deliver lectures and it takes much time. A librarian can suggest some novelties as a consultant. It's a pity that we sometimes underestimate librarians. But cooperation could be very beneficial. A librarian has much knowledge to assist a person writing a paper. If the librarian investigates the field. He has this... ability to find, to access knowledge. Something that a researcher not always has"* (P12L). Though it is obvious that the ability to find and access information has to be "honed" constantly, the problem is that the skills regarding information searching and appraisal are unwittingly assumed as something that everyone can do easily.

Thus a librarian can be a ***helpful reliable human resource*** in the complexity of information search nowadays. The co-operation is made difficult by (i) the existing misconceptions about what library is today and by (ii) preconceptions of users about their presumably good skills of information search. These misconceptions and preconceptions arise because of little awareness about the impact of human-media symbiosis on our habits of information search.

However, the existing ***stereotypes*** about a librarian impede effective co-operation between those searching for information and those who are professionally skilled in searching information: *"I once delivered a course about the image of a librarian. Those stereotypes... eh... about a librarian, so to say, there is no way to eradicate them. It's so complicated. Because librarians are doing so much nowadays, but people do not know about that. They think that we just sit there sipping tea and reading books"* (P12L). For a start, collaborating with a library can be initiated by teachers seeking to develop their students' information searching and critical appraisal skills: *"We have librarians whose main job is consulting students. Teachers should invite them to their lectures. Don't wait till year 4 or 3. Invite them much earlier, as soon as they get their first written assignments, course papers, well... at least before year 3. But they have to search for books starting with semester 1. Just invite them anytime"* (P14L). In the best possible case, consulting a librarian could be made systematic and regular.

Furthermore, professional information searching skills and ***contributions of professional librarians*** need explicit acknowledgement: *"Abroad, librarians are invited as consultants and are indicated as contributors to a work. Their contribution is valued because it's very significant [...]. Suggesting bibliography lists, novelties. There are so many opportunities for co-operation. They remain unused. [...] A researcher may not find them [sources] that quickly. The most recent, the best can be found by such a consultant. Information, so to say,*

is a valuable thing. And there is so much of it. Well, people may not know, people don't use it effectively" (P12L). The overabundance of information often creates a misconception that one can always cope on one's own (and indeed one can in a certain way but often little effective in yielding the best possible results). This misconception results in knowing only the surface of the information iceberg that a learner encounters each time he / she does an unsophisticated search on the Internet.

3.2.3. Coping

Coping with the challenges imposed by the complexity of becoming literate in the most contemporary sense is not easy. The multi-faceted complexity of such phenomena as media literacy and such processes as media education is reflected in the difficulties today's learners are facing in coping with their assignments, particularly as regards critical attitudes and selection of appropriate and trustworthy sources in knowledge construction. Coping is seen as a process of "***acquiring contours***" amidst the challenges students, teachers, librarians, and educational technologists are facing today (such aspects as (i) pragmatic ***opting for simplicity*** in searching for solutions to one's questions and assignments, (ii) ***"getting hold" of time*** available to carry out an assignment, and (iii) setting certain ***guidelines*** (or having rules) for coping with assignments. "Acquiring contours" implies teachers' and students' efforts made in dealing with the multiple complexities of human-media symbiosis (Figure 6).
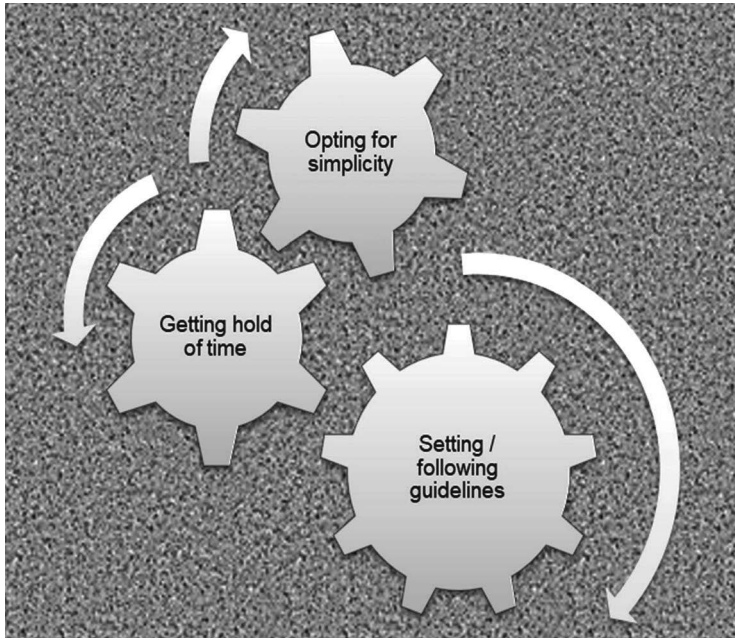

Figure 6. *Coping (drawn by the author)*

Acquiring contours: opting for simplicity

Media of information and communication that have penetrated numerous spheres of human life (and learning notwithstanding) have brought both complexity and facilitation alongside. To begin with, preference for simplicity of doing things is very human and understandable: *"I don't think it is only about contemporary people. I believe it is a common human feature to search for easier ways"* (P14L). This commonly human feature, though, needs closer examination and awareness in higher education, though.

As regards information searching and selection, the pitfall most evident in educational settings is that of opting for simplicity in confronting one's assignments. *"And it's much easier, simpler just to switch on your computer and just search Google and find whatever you need.* (P4S). What is more, information is sought for in various media and visual representation is exceptionally welcome: *"Eh... all those videos, indeed. It is just simpler to watch some material, when you are told things, because it does not look like work when you read and comprehend that information. That you put too much effort into it to get that information. You are just being told a story"* (P4S). Using videos as a simple and much more engaging way of constructing knowledge is often preferred by students and it is often institutionally imposed on the teacher as a preferred mode for delivering knowledge (as is evidenced by the tendency to incorporate increasingly more short lectures in pre-recorded video format). The strong preference for the multimodality of information presentation is reflected in the ways students are trying to combine different media: *"If I know I will find information in some book, I take it. [...] I come back home and read the text-book. Well, first it is still always searching on the Internet. But I don't reject a book either"* (P7S). There is some pragmatic aspect in here as well as, for instance, in accounting for the use of a book if knowing that the required information will be there.

It is possible that one of the consequences of what has been termed as "human-media symbiosis" in this thesis is Internet users having become "**inert**", as in the following account: *"Internet users, I think, are very inert. That's why Google is stuck in our heads as if there were no other alternatives. And we always follow the principle of the least effort. And you constantly hope to come across that magic source just by a few clicks, but not twenty or something [sources]. Because, let's say, even the databases that our university subscribes to are torturous. When I have "to sieve through" what I need I get rather irritated"* (P16T). "Inert" here implies the spontaneity of the learner (and seemingly any person searching for information online) in making decisions regarding suitability of a source and even habituation to one's behaviour online such as the use of one and the same search engine. Resorting to the tools and advantages offered by Google is thus accounted for by the interviewee quoted below: *"Not all databases that we subscribe to have the functions [that Google Scholar has]. So what do I do? Well, as a lazy researcher I follow the principle of the least effort and try to locate contextual information and data that I can access quickly. And only afterwards I go digging into those dreadfully inconvenient scientific databases"* (P16T). Such approach seems to be quite common among both students and teachers. Before delving into deeper search it is common to opt for the simpler ways of dealing with one's questions. "Dreadfully inconvenient" search in databases is a very subjective and rather emotional description; however, it reflects the human preference for opting for simpler and more enjoyable ways if one can choose.

Conversely, though, achievement and good results are related with **hard work** and **diligence**: *"Research is always, well... thorough work. Very precise – if you want to do it well. And this is irritating. But I don't think contemporary learner is prone to undergo this kind of irritation"* (P16T). The emotional element in dealing with overabundance of information and subsequent selection amidst numerous and diverse sources seems to be often at work. Therefore, mastering information search and learning the key operations from start should be made a priority for a student making the first steps in academic information search: *"Young people are sure that they can find everything in Google. But they don't know about such simple things as the static information, such as library catalogues. They see a catalogue as some nonsense. That you cannot find anything there and it is very complicated. While it is not complicated at all. It is because they do not know the basics. That by some key word search you can find it all there. It is because they are used to finding things quickly. They see a library catalogue as complicated because it is not one search bar, it is ten bars. Something that they see as inconvenient"* (P12L). The misconceived and feared complexity of search in institutional databases thus hinders using effectively available resources such as library catalogues. This is also evidence of our habituation to an accustomed search model, i.e. the simplicity offered by the search bar of the clean white Google search window.

Another aspect that has already been touched upon in the section on library above is that of the importance of **having information repositories in one's close physical proximity**: *"You don't need to go anywhere, you don't need to ask more experienced people for advice, you don't need to go to a library to search for information. Because Google offers it all here and now. Especially if you have your smartphone, your tablet with you. You get that knowledge right at the very moment"* (P14L). Having "it all here and now" has erased the boundaries between the knowledgeable and professional sources such as teachers or librarians and the free-range indefinite sources on the Internet. "Getting knowledge right at the moment" is the preferred way of knowledge construction. Therefore, it has become complicated for an inexperienced person to distinguish between the trustworthy and serious sources and what can be described with the prefix "para-" for "something like ...": *"Another important thing regarding the simplicity of doing things is... I myself delivered a course in philosophy. Philosophy and psychology are often mistaken as identical with para-psychology and something like that. People want to do things easier and they do not distinguish between serious works based on rigorous research and boring to read texts and popular texts, for example, basic simplified text-books about psychology. And it is probably the same in any field"* (P14L). Media literate person in higher education should go much deeper than scratching the surface of the commonly found information via indiscriminate simple search.

Teachers have also been concerned about this preference of students and have come up with certain ways of corresponding to the preferences of learners: *"We often indicate pages from books for reading, explain what to read. And still they use those... those pre-prepared materials that I have seen more than once and that serve them as orientation because it is simpler, it is information that has been processed. Why? It's difficult to explain"* (P14L). Though it may be difficult to dig as deep as the original source of some piece of information found online, we have to be at least aware about the existence of huge amounts of "digested" materials that have undergone editing and various processing by multiple Internet users in contrast to original sources that are in many cases difficult to locate and discern.

Media education and media literacy lead to a raised awareness about media in our lives. By knowing them better (deeper than merely at the convenient operational level creating the illusion of being a masterful user), learners can start feeling the urge to **extend one's boundaries** so that enjoying simplicity would not occur at the cost of seeking perfection as the interviewee below regrets: *"Again those simpler ways of doing things. But... but I am always overwhelmed by an individual's unwillingness to seek perfection. He does not want to extend the boundaries of his possibilities"* (P14L). An educationalist's aim, therefore, should be offering help for learners to step outside one's subjective circle of knowledge constructed by Google search algorithms (the main principle of which is personalization and, consequently, enclosure within one's likes and subjective interests): *"In this case, I think a person is left on his own with this subjective... subjective... possibility to take what's closest to him. Well, I mean, he himself has to choose. Because information is this and that, this and that... Now a person bears personal responsibility for choosing information that, from his point of view, is acceptable for him"* (P6S). Coping on your own has been always culturally valued as a proof of personal strength. However, the human-media symbiosis has produced the effect of "choosing what's closest" in coping on your own amidst information flows so that under the conditions of information overabundance we are in fact enclosed within subjectivity and are deprived of possibility to step outside the boundaries of one's likes.

Acquiring contours: getting hold of time

Though the existence of immense amounts of information on the Internet has replaced physical travelling to information repositories such as libraries, the easy accessibility has not left us with more time: *"There is an immense amount of information, immense. Therefore you have to select all the time. I always draw this line for myself: the most important information for me is that of the official institutions, their reports and documents. Then what is important for me next is the documents of central banks of different states. And legal acts. And later, if there is time, but only if there is time, I will read what is going on in certain associations that publish their documents [...]. Meanwhile all commercial communication, mass media and everything else – this is impossible to follow. And I do not worry about that at all. That I won't have time for reading one or another thing. A student asks me: professor, have you read this or that? No, I haven't. I ask him: Where have you found it? He shows me. Well, I read that if I have time. And if I don't [have time], I tell him: I don't have time for that. Or, to be more exact, it's not exactly having time, it's just you can' embrace it all and read it all. You just can't"* (P5T). The interviewee states to "draw the line" in info selection by focusing on selected institutional resources because of the lack of time that is commonly experienced amidst the immense amounts of information available on the Internet. Or, in other words, the interviewee **makes decisions regarding what to read depending on the availability of time** because "you can't embrace it all, just can't".

Sometimes sources are being discarded because of poorer linguistic skills as for this interviewee who is not a native English speaker: *"Well, my English is not that advanced. To take any text and read it fluently. Because I have to concentrate, then I have to look up a dictionary or some other source to be able to comprehend it all. And it takes time. To comprehend it. And I need more time then. And I will have to read... long"* (P6S). Supposedly, this occurs

also with learners who discard texts because of the complexity of their language, not necessarily because it is not their native language. This may bear some relation to the preference of opting for simplicity in tackling one tasks that has already been discussed in the previous section. Speaking in more general terms, a source may be discarded simply because it is seen as consuming too much time.

Sometimes the multiplicity of things that a learner can engage in besides studying a particular topic or question at a given moment can produce the **perception of rapidly passing time**: *"Yes, yes, if we only had time [laughing] I don' know... I sometimes ask myself why there is so little time nowadays. Because there are so many things to do. We are in a constant hurry. And our priorities sometimes determine how much time we allot for the things that require more time. Or maybe I spend more time on some things that I shouldn't..."* (P6S). Asking where time disappears is a philosophical question; however, looking at it from a more pragmatic perspective, the constantly experienced lack of time may be related to multi-tasking activities that it is so easy to engage in when media are constantly at one's side: *"Maybe I don't manage my time appropriately. To investigate certain topics well that I should. There is no time. And what you can do then – there is always the Internet and its things"* (P6S). Admitting possibly inappropriate time management is the first step to analysing one's habits in dealing with media and searching for information. Interestingly, the interviewees' comments often revolve around their use of the Internet sources for information searching, not books whose quality is easier ascertained: *"I think information quality on the Internet is often poor. Because, as I've already told you, the authors are often not known. And their competence is often not ascertained. However... by searching and reading [more] you can often select the facts that are important for you and... thus save... time... and select"* (P9S). Therefore, the interviewee states to read more "to select the facts that are more important for you" to save time required for reading. Importantly, reading here implies a very fragmentary process: the interviewee does not speak about an extensive reading of lengthy books in this excerpt. Thus when analysing the issue of critical appraisal of quality of sources it must be taken into account that reading nowadays is often a fragmentary type of skimming multiple texts online never reading them extensively from beginning to the end. *"Speaking of our university's system for searching books, I have to admit I practically don't use it. Because necessary information is generally found on the Internet. Sometimes it's the lack of time. Because it's about books that require much more time resources. Scanning a book takes much longer"* (P9S). Thus the university's library resources are rarely used by this interviewee because of easily accessing needed information on the Internet and because much of the information on the Internet is likely to be provided in short formats allowing for rapid skimming of texts.

To save time, today learners employ various tools offering **summarized versions of lengthy texts**: *"I will probably reveal you one trick used by students. For instance, once we had the assignment that consisted of reading a lot of books in a set period of time. And you probably know that students often postpone doing things and loose time. And if I remember correctly the website is called SparkNotes. [...] It was really important because I did not have time for reading a really long piece of literature. And every chapter is summarized in this website"* (P9S). Using "tricks" for doing required reading because of lack of time is a coping strategy of learners trying to overcome the tension that arises because of two reading modes that are

needed by learners nowadays: firstly, extensive focused reading cannot be dispensed with when a subject is studied thoroughly and, secondly, the fragmentary reading of multiple sources online when trying to do an assignment in a very limited period of time. Therefore, the experienced lack of time is seen as something universal and very human: *"I am sorry for mentioning this lack of time that often. I am student, I don't have a job, but I still lack time very much. But in fact I think it is experienced by all people today"* (P9S). A teacher similarly views the experienced lack of time: *"It's all so human. Everyone wants to meet deadlines. Everyone wants to come across that magic text that opens your eyes. But in fact we usually lack time. So we save time. You choose the quickest route to your sources"* (P16T).

Therefore, those students who have been analysing their time management have come up with individual strategies for dealing with the experienced lack of time: *"Yes, I try to allot time to different things. Especially during examinations session. Because, if I may say so, in the electronic space we as if lose the sense of time. It as if dissolves. If you are reading an article and you go to some social network, you lose time because learning requires much time. So I allot some time for pleasures and everything else is studying. And I prohibit myself to use a computer from certain hour, or a mobile phone. I am very strict about this. It is very... very... what should I call it... effective. If you adopt this attitude and allot time for work you see the results more quickly"* (P9S). One of the manifestations of the symbiotic human-media relationship is evident in those accounts where pertaining to the experienced lack of time (when doing things on the internet) is seen as "losing sense of time". Therefore, this interviewee finds strict management of her use of media and available time effective while studying. One interviewee, a university teacher, thus accounts for the disturbing penetration of media and her way of helping students to deal with that: *"We don't succeed... and I think the same occurs to all learners... that we do not know where exactly the limits are: we feel the need to look at our screens and to respond to a message immediately"* (P19T).

Most importantly, it is necessary to know the media we prefer using in our knowledge construction and to act accordingly by trying to find ways to **manage the available time** and the efforts required to complete an assignment: *"Why should we go back to the 18th century and possibilities of that time? Nowadays we have technologies that make your work more effective. But if you are just wasting time with them, then it's not the fault of technologies"* (P16T). Adapting to change occurs both spontaneously (because we want technological tools and media to facilitate numerous processes in our daily activities) and in a governed way (when an individual starts to be aware of the impact of information and communication media and possibilities of managing them). The constant presence of media "incorporated in your personal life" makes the task of managing one's time difficult but possible by "delimiting time and space" spent and allotted for activities involving media use: *"Having to delimit time is a problem. But you have to delimit time and space. However, it's difficult with social networks. Because they are incorporated in your personal life"* (P19T). As one experienced university teacher and educationalist proposes, "setting boundaries to certain activities" is a competence that has to be taught and that is needed by students in the lived global reality: *"I believe that we have to be taught about or have this competence of setting boundaries to certain activities. I am referring to this global reality. We cannot be engaged in that many areas at the same time inside this global reality. But I think that in higher education*

it is necessary to be able to set boundaries to various activities in order to have a better vision, to know well the reality and to stop this effect of the speed of light that produce multiple windows open in our gadgets" (P19T). Most importantly, the ubiquity of media has fragmented our daily activities into bits that intertwine with once strictly separated activities and times for these activities (such as learning, working, relaxing, socializing, communicating, etc.).

Acquiring contours: setting guidelines / having rules

This section revolves around two aspects: firstly, the "**negotiations**" of teachers and students about the use of formal institutional VLEs and informal social networks and social media, and, secondly, guidelines and rules followed by students and teachers in dealing with the complexities related to overabundance of information and multimodality.

Firstly, teachers are often compelled to use institutional VLEs to deliver their materials and instructions and to outreach their students behind the physical walls of their institutions. Educational institutions have been trying long to take media (for example, social media) up and use virtual learning environments effectively in order to meet the needs and preferences of learners and to deal with conditions imposed by competition among institutions. Virtual learning environments offer multiple useful possibilities for delivering content and maintaining communication; however, institutional virtual learning environments are often seen differently by students and teachers. Teachers often see VLEs as, first and foremost, repositories of their subjects and studying space for their students when not meeting them physically; for students, however, VLEs are too restricted exactly because of this. Today's learners are becoming more accustomed to engaging in multiple activities at the same time in their gadgets with the Internet connection that are constantly at hand: *"To prepare for examinations, students have to study the materials uploaded in Moodle. So Moodle requires space and time for consulting it. Meanwhile, they communicate in Facebook, in WhatsApp. They can do it there at any moment. No doubts, Moodle is associated with work, work and work environment, and time for work. So I think this is where the difference between Moodle and social networks lies. It's not that Moodle is boring or isn't useful. Moodle has many possibilities for work. But I think that they associate it with work only"* (P19T). Thus formal institutional VLE is seen as requiring effort and delimiting learning space and learning time.

Delimiting learning space and time can be very difficult for those students who are used to being connected constantly to their social networks and constant study-unrelated communication. The following extract shows what such a learner is experiencing and how she is trying to deal with it: *"You have to learn to use Facebook. Because it shows you everything your friends share, like, post... So... you have to learn to filter that material so that it is most suitable only for you personally. For instance, when I started using Facebook, I got used to open it every day and think: oh my god, it's again this fool (sorry for using that word) posting his nonsense. I started to feel very bad every day... because I saw trash every day [...]. But there are functions of filtering all that. You just block the person whose news you do not want. But you can leave that person in your friends. One day you might need to contact him, for instance [...]. So this is also sometimes irritating. Well, disturbing your work"* (P11S). The basic strategy used by this student for coping with the disturbances is that of "learning

to filter information". Much of communication among groupmates goes on via Facebook because students use their formal institutional VLE only if it is required by their teacher. Therefore, their informal social media accounts are constantly open. The difficulties they are experiencing when trying to disengage from this constant connection are described by the following interviewee: *"It [Facebook] is constantly on. I mean when I am at my computer. [...] But I don't read all in-coming messages. Unless it's some news. Sometimes it's disturbing. But when I am studying, I always log out of Facebook. I have learnt this lesson well: when studying, you log out of everything. Everything. Even the phone. Because it is really very distracting. Facebook as well. It's such a thing that I rate 50/50. Both good and bad"* (P10S). Intentionally logging out of one's social media account when studying can be regarded as the most extreme strategy requiring much will from a student. Disconnecting from a platform that offers you multiple possibilities in comparison to a rigid institutional virtual learning platform requires conscious effort as it is accounted for in the previous excerpt. Normally, however, an informal social network is difficult to ignore, especially if a student can manage its use on a more advanced level: *"This is attracting: if you have perfectly systemized information that you receive and you feel happy in Facebook, then you are attracted to it. It is your portal of knowledge and news. For example, I receive news much quicker in social media rather than television"* (P11S). "Attractive because bringing the feeling of happiness" is the least likely attribute that can be associated with a formal VLE. Therefore, the attractiveness of social media for a learner (who is functioning in an environment where learning or work are merging with what was once considered as leisure and pastime) can be hardly approached by unconditional strict requirements and imposing one's rules of game. The tension is best approached by trying to stick to certain rules of use and raising awareness about media of information and communication.

"Acquiring contours" is achieved by ***tackling the overabundance of information*** of varying quality and multimodality of texts. As regards reading much of hypertext online, it can sometimes be tiring because of its infinity: it is mostly reading in fragments never reaching the end because, indeed, there is no end to it. Therefore, when asked about their coping strategies, the interviewees sometimes find it difficult to explain them in exact words: *"You're just trying to stay within certain boundaries"* (P3S robmerkel 001-36 attempting to control hyperlinks). "Staying within certain boundaries" is rather undefined: it still entails fragmentation and mere skimming or quick locating of certain themes: *"The most important thing is locating the themes or just reading by skimming... to spot the most important information"* (P3S). Deciding on the most important bits is again rather undefined: *"Judging based on the information itself. Maybe it's intuition. Anyway a text is more or less constructed in the same way: introduction as one paragraph, then body paragraphs. Just like writing an essay. And then the conclusions. Body is most important"* (P3S). Using intuition in locating the most important bits is actually something that the student has learnt previously about the traditional structure of a text with an introduction, body and conclusions. Similarly, resorting to intuition is following some previously acquired knowledge: *"I do everything intuitively. Following what I know. The websites I know that can have the information. Searching there. [...] Sometimes it's the social networks. Yes eh... In social networks, sometimes there are links to other websites focused on various activities and sometimes there are advertise-*

ments that direct you to the required information" (P3S). The most astonishing aspect of coping reflected in this excerpt is mostly aimed at dealing with impressive fragmentation of knowledge construction via Internet search or social networks.

The abundance of information often causes such negative emotions as ***desperation*** or ***loss*** or sometimes physical or mental ***tiredness***. This is also an important thing to deal with appropriately. Overabundance of information is not the same as abundance of information. "Abundance" is a word that normally bears positive connotations while "overabundance" implies excess: "*Indeed, I often face this rather desperate thing. I am doing something in my computer and I see the overabundance of it all. And I know that I will never be able to read it all in my life. Not speaking of memorizing things. And, and, and... somehow make use of that information. And sometimes I am terrified by this vastness of information. Or... should I say the vastness of the Internet. The overabundance of information makes me feel claustrophobic sometimes. You don't know how to comprehend it all. How to use it effectively for your own good. And maybe... it is the drawback of all those things – having that much information*" (P4S). Feeling desperate, terrified and claustrophobic are the attributes that this interviewee associates with the overabundance of information and the difficulties experienced while dealing with one's assignments.

Therefore, it is only natural that the role of the teacher (this has been discussed in more detail previously but is raised here again as a relevant issue) should be focused on ***helping*** students with source selection, source criticism and appropriate referencing of sources: "*For a year I haven't encountered any such requirements [to critically appraise sources]. Because... in fact, bibliography is included in our course description. But we rely on our own decisions when preparing [bibliography] for presentations*" (P9S). Leaving students to select sources on their own stems from common preconceptions among teachers about their students' (who are seen as adult learners) search skills while indeed students often find search quite complicated when they are informed about advanced search possibilities: One interviewee thus described her impression after attending an introductory library seminar on information search: "*It seemed complicated. Selecting key words well... searching according to specific criteria... various authors... Or... I don't quite remember really*" (P9S). That the preconception about the factual abilities of students who have just entered a university should be analysed deeper is reflected in the interviewees admitting that she finds it difficult to remember everything she was taught in the seminar after some time. In other words, media literacy is achieved by constant practice, raised awareness and deepening knowledge about media.

Taking academic information search skills as inherent is also a ***misconception***: teachers in many cases admit their students failing to define what quality information means. More often than not, students are left to float on their own in the overabundance or information. What is more, university teachers are in many cases also researchers and they are experienced and skilful in source criticism. Therefore, it is important to take into consideration the fact that an average person searching for information is a user of processed information: "*University people who have been using databases for decades take the search skills for granted. And when they give assignments to students involving some information search they don't explain the main nuances that have to be taken into consideration when searching for*

information. *That's why students do whatever they think appropriate. Searching in Google, following the likes of other people and search for answers in the way they imagine is searching. And as a result we hear teachers saying that students lack skills, are poor students when in fact they [teachers] don't explain the basics. And I am convinced that academic people should be more realistic and take into account the fact that the current generation is the generation of social networks, but they are not users of direct and quality information. Searching for quality information has to be taught. By showing certain paths of accessing sources, appraising sources and their reliability*" (P16T). Explaining and reminding students about the nuances of academic information search in each particular subject can be what students often prefer, i.e. "showing the right track" for them to be followed. Therefore, some university teachers see instructing students about information search via media as an inherent element of their teaching: "*I work on this with my students. I instruct them about this when we are preparing for their practical assignments. Because there is no such subject as media education. And I teach them a little bit about source criticism*" (P19T). Integrating teaching about information search and source criticism in every subject is a vital element of today's teaching.

Usually, students are rather ***spontaneous*** in their decisions regarding the suitability of sources: "*I don't let that tiredness creep in on me. Because when I just start feeling it I leave the page. If I see that information... those hypertexts... are presented in a too unprofessional way, I leave the page at once and don't read it. I close it. I distrust such sources*" (P11S). Starting to feel tiredness "creeping in" on her is indicated by this interviewee as the moment when she quits searching by following hyperlinks indiscriminately. Lengthy reading and search online seems to produce more tiredness than traditional paper reading. Possibly, this can be coped easily with some help of a teacher in giving certain directions in delimiting search scope: "*I liked it when I was given directions. Because you are... well, not professional in the field and the teacher is a professional there. And he knows everything. He knows the literature best. And a student studies more than one subject. [...] But when you are studying more than one subject, you can't allot all your time for one subject only. Especially if you have it only four months. And then that's it. You never go back to it again. You can't allot that much time. That's why it's very important that a teacher show what good sources are. What you can and cannot use. It's like showing you the direction for better orientation. [...]. And not trying to embrace it all and finally learn nothing. Teacher is very important as a guide to achieving that aim*" (P11S). It seems to be a misconception to believe that students enjoy that much of autonomy that they are given because it has simply become common to refer to autonomy as always welcome by the learner. In fact it seems that in many cases a learner prefers certain amount of direction for a very obvious reason: a balanced direction makes one feel secure: "*I consult with my teacher. To tell you sincerely, I usually distrust electronic sources in the first place. If I have to investigate a totally unknown topic, I firstly consult face-to-face with a professional. For instance, if I have to write a yearly paper on translation, I consult my teacher of translation. If I have to write a yearly paper on entrepreneurial risks management, I consult my risks management teacher. This is what I firstly do. And then I go to Google and try to find the information pertaining to the unknown topic. And I try... to select the articles that are easiest to understand because if you are not a specialist in the field, you don't have to know all that theory. You have to concentrate attentively only on the part*

that is related to your topic" (P11S). Assisting students in reaching a balance also revolves around the disposition of a student to resort to the simple and known ways of information search. Following a teacher's guidelines or one's own strategies for information search has to be considered in relation to the two previously discussed properties of coping, i.e. opting for simplicity and managing the flow of time. Opting for simplicity of doing things can also be approached by teacher by trying to suggest a student to engage in a more sophisticated and delimited information search that would deepen a student's knowledge and that would assist the student in overstepping the boundaries of the personalization principle imposed by the little known search algorithms. What is more, learning to do an advanced search contributes to more effective time management.

Even advanced learners admit lacking information search skills and learning basic operations in informal settings from friends or relatives, but not in educational settings: *"Yes, I sometimes try to change the way I search. Because sometimes you realize that information is not in the first page. And you try to go for the second. At least the second and then maybe further, because it [the first page] wasn't the right thing. But people don't know how to look for information. One friend told me how to use the symbols to get more information. How to do more complex searching: selecting by author, types of document formats, pdf or Word. It was my cousin who told me: you need to do that, then you have more... your selection is shorter. Not that difficult. So that's something that we are not taught. I think it would be interesting [to learn] how to use [symbols] and how to use Google. Or Google Scholar. At least Google. As I just said – there is so much information"* (P18S).

Learning advanced search is defined as one of the main competences: *"They always refer to Google. And in Google, the main competence that they have to acquire is that of the use of markers for search... for making advanced search. Firstly, one has to think about the time set [for an assignment], the space where one is going to work, the object, the theme one is going to investigate and to use this tool... that is, a strategy for searching what one wants. Once I am aware of my search strategy, I [think about] the source criticism I am going to do. And I also intend to compare the problems stemming from a different perspective. I am convinced that basically this is the process that learners have to engage in when working with communication media"* (P19T). For this interviewee, advanced search means more than just appropriate use of search operators. Advanced search is seen as composed of the following steps: setting the time available, choosing suitable environment for doing the assignment, clarifying the object of research and the theme to be investigated. This is seen as the basis of the search strategy that includes source criticism one is going to do and necessarily comparing the investigated object from different perspectives.

Managing info flows is best approached by ***learning to use filters***: *"Because you do not know how to use filters. Because the system shows you everything. It's like eating at a buffet. You come and can choose from everything. Sometimes you feel sick. What you can do – manage your filters. The same applies to Facebook and any other social network. If only you succeed in sorting out your information, rejecting everything of "Oh, that might be interesting" type... because with all that abundance you cannot manage it all... you cannot read it all. Or you can read only the surface of it. So if you want to investigate a field in-depth, you have to understand the system and to focus on the things that don't disturb you"* (P16T).

The fragmentary mode of skimming hypertexts is metaphorically described by this teacher as "eating at a buffet". Therefore, he makes a distinction between understanding things only contextually and deep understanding of a studied field.

From more advanced student's perspective, these are the ways of tackling complicated information search: *"I think I just evaluate the paper. I write my kind of... that's something that I always do with everything in my life: I try to do brainstorming. I look for information about a topic. So I put it in the center and then I investigate it and write it. Once I finish my brainstorming I try to connect the ideas and the websites I have opened. Then I either close some of them or [...] try to save them. Or even copy the information and save it in a [Word] document. And then I am trying to move the information. Print it out. And then make my own... my own list and see what is useful and what is not. Maybe there was something that was good but I don't have it in my list. But you always need to have an outline not to get lost. If you have found information but haven't saved the webpage you copy the information. It may happen, for instance, when you are looking for bibliography, you can't remember where you read things. That's why I like to print them out: because you can always go back to the paper and see if it is included in your bibliography. And on screen it is a bit more difficult"* (P18S). **Brainstorming** and subsequently looking for relationships between concepts in **concept maps** is done in parallel with the search in different websites. At the same time, website information is also appraised and either discarded or saved for later reference. Saving information in a Word document and printing it out is done to get a better grasp of the researched topic and selected papers. This student is very clear about her way to tackle the problem of losing much of previously encountered suitable information online if it is not saved in some tangible format. "Not remembering where you read things" is probably one of the most common things that has occurred to everyone investigating some topic. The tangibility of paper also comes in handy when drawing concept maps: drawing concept maps on paper is seen by this interviewee as bringing more clearness and facilitating seeing the overall picture: *"Yes, I can change it and I can do it again, again and again [laughing]. You can also do it with a computer. But again, I don't like using computer all the time"* (P18S).

Taking notes (especially on paper) is a very interesting aspect of coping with the over-abundance and diversity of sources. Though many gadgets can be easily used for note-taking, some learners still prefer note-taking on paper. One research participant defined "jotting things down on paper" as meaningful because "it is the way to learn" (P18S). Similarly, a librarian has described note-taking on a blank page: *"The Internet will reach you anyway. Because such is the world we live in. But who you are really? We have to nurture some curiosity. A good way is to start with a blank page. This will make you think for yourself. And thus you come to form your own opinion. It is clearer to you. You are not that scattered in everything. Because the internet can impose the opinion of others on you. Ads may have impact on you. And you will never know. And the blank page – it will show you what you think. We can find out what we ourselves think very well just by writing on a blank page"* (P12L). Importantly, note-taking on a blank page (before embarking on the Internet search) is seen as a way to see what your personal opinion is before you delve into to indefiniteness of the Internet space and its texts as regards authorship and trustworthiness. Besides, brainstorming on a blank page is regarded as nurturing curiosity – a vital feature for broadening one's outlook.

A common way of coping for students in dealing with questions that arise in the course of an investigation of a topic has become **using the email for consulting** with one's teacher. However, face-to-face communication has retained its role as the most effective way for better understanding: *"I think when you write an email it's like a tutorial. It's easier for you as well. But I prefer face-to-face because even when you are writing something there may be some misunderstanding. You don't put it properly and you don't get the answer. So I think this type of platform [Moodle] is useful, but just in some particular cases. When you cannot go [to classes] because there are so many things to do. But I prefer face-to-face. It cannot really be replaced. At least to me"* (P18S). Distance communication always entails some degree of bigger possibility for misunderstanding to occur than live communication in a physical space. This tendency has already been mentioned in the section on the preferred modes of communication between teachers and students. However, it is also relevant here because it is important to look at why certain modes of communication are preferred over others. Consulting a tutor remains an essential element of successful achievement: *"Because teachers are our guides. So now, with my project, I have collected information and I go to my tutor's office and I ask him: am I on the right way or not? Because it happens [that you lose your way]. I am investigating now how to use stories in teaching and I sometimes think: I have so much information about many stories. And there is a point when I need to stop. Make myself clear. And I go to the teacher and ask: what's wrong? I think I am too unfocused. What do you think I should change? What to include? And so I always ask them... to have a look"* (P18S). The moment of felt loss amidst the amount of information that this students reports being exposed to in her research has urged her going to the tutor for finding a solution. Though the amount of questions students ask their teachers may be culturally-specific, teachers have to be aware of the emotions experienced by student facing the overabundance of information and diversity of sources.

From a librarian's perspective, a good strategy for effective selection and appraisal is being **guided by established authors**: *"I always build my knowledge on certain authors. For instance, I like a person writing about some subject. I like his ideas. I start searching for more of his works on the subject. I try to find his most important work for my topic and then I see from it who were other authors. I note down some terms from related subjects, I study these terms. And in this way, so to say, I do things step by step. Indeed, for me the most important thing is to find the author who is very experienced, who publishes and researches a lot about the subject of my research. And several other key authors that he cites. Because they, so to say, are very experienced. And you shouldn't search for more simple texts or just several short articles trying to find out who researched the topic. If it is only surface, ignore such texts"* (P12L). Thus, delimiting the boundaries of information search amidst the overabundance of sources can be done by relying on a certain author and his or her bibliography. Or, alternatively, certain tools can come in very handy as the librarian further explains: *"All those social networks, possibilities on the Internet, various apps, for instance. I, for example, I prefer not to browse the Internet and all those numerous websites just for the purpose of browsing. I choose websites that I find interesting and I subscribe to their RSS feed. And I read them in the run of the day, follow the news. I don't browse just anything on the Internet[...]"* (P12L). The librarian's approach for coping with information overload can be effectively combined with the strategies described previously.

To finish the description of the findings about the ways and means of coping with the challenges of mediated knowledge construction in the accounts of this research participant, it has to be added that what has been said so far is a tiny part of how in fact learners cope with the quests in their lives. Coping is a process that stretches across a ***continuum*** – it starts with basic operational skills and becomes more elaborate as it is conceived as something that can be analysed meta-cognitively and that can be and should be constantly improved. Many steps have been discussed so far, but one of the most sophisticated on the continuum is that of becoming able and agile in confronting hidden, deeper and figurative meanings: *"Some knowledge does become outdated. But the base is always the same. We have to take the base and adapt it to the current stance of the learner. Just that. Because... think about the requirements for preparing materials for electronic studies – we are asked to prepare short videos and shorter texts that students could read. Well sometimes it seems incomprehensible. But the reality is such. We have to reach out somehow to the learner of today. But again, going back to the argument we made before – that philosophical texts may be too difficult for young students. But the writers of Ancient Greece or Rome – some of them are more difficult than others. If you remember Plato – I always bring forth the allegory of the cave to them [the students]. Just several pages. It is in fact a very easy narrative. But what astonishes me – they do not think metaphorically. They see only the lines. They don't discern the deeper meanings"* (P14L). Being able to ***discern deeper (metaphorical, figurative) meanings*** is an essential element of the literacy continuum. Even more so, being media literate today also means (i) being ***agile*** in approaching mediated knowledge construction and (ii) fostering ***curiosity*** in investigating the lived world.

CHAPTER 4. THE SANDGLASS: A GROUNDED THEORY OF MEDIA LITERACY IN HIGHER EDUCATION

In this chapter, a constructivist grounded theory *The Sandglass* is described building on the data that has been collected and analysed in this research in investigating what media literacy implies in the settings of higher education for its participants (students, teachers, librarians, educational technologists). The theory revolves around two axial categories – MORPHING and ANCHORING – that have emerged as most significant, overarching and meaningful and that form the two bases of the metaphorical *Sandglass* image (Figure 7).

The intuitive adoption of the digital habitat is occurring under the conditions of what has been termed MORPHING in this thesis. Speaking in narrow technical terms, "morphing" is the smooth transformation of one image into another by computer, as in a motion picture[6]. In educational context, this term is seen as defining the processes in the external world and the changes in the human mind and habits pertaining to learning that are impacting learners' coping ways, strategies employed for dealing with one's assignments and approaches to the appraisal of diverse information reaching a learner from multiple sources that are used in constructing one's knowledge about the world. ANCHORING is a label for the second very rich, multi-faceted axial category implying multiple ways of dealing with the challenges and tasks that a student, teacher and anyone in a higher education institution are dealing with[7]. Media literacy has been looked upon in this research from the perspectives of those who are directly involved in educational processes and most of whom are not directly concerned with what media literacy is from a theoretical perspective. Thus, their viewpoints and personal accounts render very personal, lived experiences that are authentic and, therefore, true because they arise out of very practical, pragmatic daily actions and decisions.

The Sandglass is a metaphorical representation of the process, structure and context of media literacy in higher education nowadays when knowledge is being built on the confluence of multiplicity of sources via various media, technological tools and multimodal information. Media literacy is also seen as an outcome of purposeful and integrative education about the media that are employed in education and learning processes to search for information and to build knowledge and worldviews. In educational context in particular, information selection has to be subject to purposeful and directed critical appraisal of information and source criticism. Any skills developed in higher education are seen as necessarily extending merely operational level: an advanced user is a media literate person who purposefully seeks to become knowledgeable about media themselves: their impact on his or her thinking, habits and decision-making (this is located in

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6   morphing. (n.d.). Dictionary.com Unabridged. Retrieved August 25, 2017 from Dictionary.com website http://www.dictionary.com/browse/morphing

7   The meaning of the term *anchoring* used here is different from its meaning in cognitive psychology where it was first introduced by Amos Tversky and Daniel Kahneman back in 1974 to refer to a type of cognitive bias in human judgment and decision making. Also, it differs significantly from Roland Barthes' concept of *anchorage* which implies focusing on one particular meaning of a polysemic image.

the essential, though narrowest, part of *The Sandglass* – its neck (a narrow passage whose size regulates the speed of the flow in a physical object called a sandglass). One of the processes represented by *The Sandglass* is a constant "con-flowing" of information from diverse sources (reflected mostly in the MORPHING part). The structure of knowledge construction is very ephemeral and granular, fragmentary. The granularity of information accessed via the internet entails another process, i.e. fragmentary knowledge construction and constant change accompanied by doubts because of the fluidity of content (represented by the ANCHORING part of The Sandglass). The context is the heavily technologized learning environment and mediated exposal to reality, i.e. getting to know much of the reality through various multimodal media (the context is the background of both the MORPHING and ANCHORING processes). Most importantly, the movement in a sandglass is two-directional and of double nature: on the one hand, it ceases at some moment but, on the other hand, it is set in motion by a simple bottom-up twist – it is exactly what learning has become nowadays: never-ending and requiring constant updating. Therefore, though knowledge construction is undergoing constant "morphing" and is full of uncertainties, with some expert professional help it can be facilitated and revisited. Educating about media leads to media literacy, i.e. awareness achieved through meta-cognition pertaining to media. Thus, *The Sandglass* theory revolves around re-thinking media literacy (and in fact literacy) through the image of a physical object, a sandglass, whose main purpose is measuring the passage of time with the flow of sand through a narrow neck. Time has emerged as a concept that is ever-present in the background: the research participants often referred to the experienced lack of time and emotions such as loss, desperation, tiredness when faced with overabundance of information. This is some contradiction to the euphoria that is enjoyed by technological enthusiasts. Therefore, the innumerable benefits brought by media into our lives have to be looked upon critically in educational contexts. Education nowadays should be aimed at empowering and enabling individuals to become more immune to the negative impacts of mediatisation in knowledge construction.
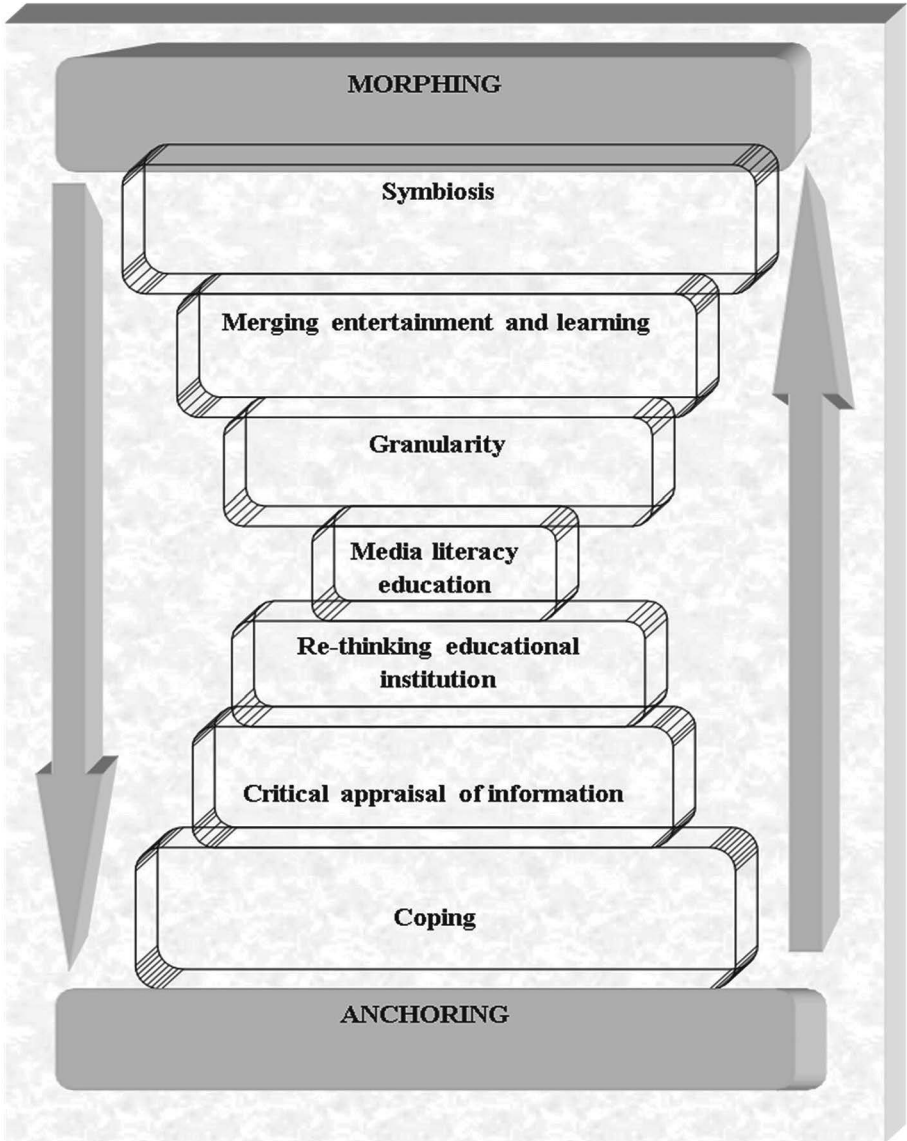
Figure 7. *The Sandglass*

Morphing and media literacy

Easy access to multitudinous sources is one of the benefits brought by media of information and communication. However, it has had its consequences on the way students and adult learners search for information. Morphing implies the indeterminacy and instability

that a learner has to deal with. What is more, when, with the advent of Web 2.0, every user has also become a creator of online content, morphing has resulted in overabundance of information. Morphing has also created the impression that media can be easily mastered, and that operationally simple and quick search can yield almost unlimited possibilities of encountering needed information. However, in fact, such belief delimits users only to surface search and does not encourage going much deeper in knowing media and the consequences of knowing the reality in a mediated way.

What is more, learners' handling of information and communication media in their knowledge construction has become very pragmatic. Pragmatic reasoning of users and learners is reflected in their preferences to quickly access information and get short and simple answers. The phrase "we just want to use it" reveals this kind of a viewpoint: *"The problem I see is that the user, well... I wouldn't say that the user does not know how, but the user is, as a rule, lazy. I mean... who wants to configure their profile, spend 5 hours analysing privacy settings and then blocking some contacts. Nobody. We just want to use it"* (P16T). What applies to students in the investigated context also applies to other actors in higher education and, in fact, any person. We indeed think very little about the impact of media on our worldview. Nowadays, it does not suffice to have a few preferred and trusted sources because the number of sources available is increasing continuously. Thus, students often come up with their own sources that are unknown to their teacher which does not necessarily mean that their sources are inappropriate. It is morphing of the information world that has imposed its own rules on the ways we build knowledge today and has made it necessary to re-think teacher and learner roles. Morphing is evident in three dimensions: (i) human-media symbiosis (Fig. 1 on p. 63); (ii) merging of entertainment and learning (Fig. 2 on p. 82); and (iii) increasing granularity and fragmentation in knowledge construction (Fig. 3 on p. 88).

First and foremost, media literacy in higher education is rooted in the emerging meta-cognitive awareness about the necessity to go much further than merely enjoying operational skills in using media. This is most evident in the relationships existing between the internal and external loci of symbiosis and modus operandi: the deeper the awareness, the more effective strategies employed in dealing with assignments. Thus, the human-media symbiosis is depicted as a continuum of an unperceived habituation at the one end and a conscious and witting direction at the other end. As one of the research participants states, the continuum is a search for balance in the use of media and technological tools so that they do not "reign over" a person: *"I would not describe technologies as the good. I see the good as something else. They are assistance. A person... if one can use technologies in the right way, they [technologies] won't reign over him. If one cannot use them appropriately, then it is a different thing"* (P11S). In other words, this is a matter of empowerment of a learner. Empowerment comes through better understanding of the tools we employ to build our knowledge and worldviews: *"I believe that it [information search] is the most essential thing that students have to be taught about. Very essential – using anti-virus programmes, finding out more about search engines and websites that we are using. Because we often do these things without much thinking"* (P9S). Human-media symbiosis, therefore, is both spontaneous (as it is reflected in the properties of the internal locus and natural modus operandi)

and guided and manageable (as it is reflected in the properties of the external locus and negotiated and directed modi operandi).

Another very important aspect of what it means to be literate on a more advanced level is awareness about an effective management of one's use of various tools and media of information and communication employed for information search for multitudinous purposes (e.g., communication in social networks, pastime, education, learning, etc.). Therefore, an effective management of mediated knowledge construction necessarily takes into account the tendency for learning and entertainment activities to merge: engaging in learning is difficult if media are not extensively incorporated into the learning process. However, this has complex implications: maintaining attention becomes difficult because of the constant presence of informal social networks offering more engaging activities than mere focused learning; hence, the research participants have often reported their feeling bored if the use of gadgets is strictly limited or feeling too lazy to engage in the search for serious information such as found in academic databases in contrast to engaging with the content available in social networks.

Teachers are also experiencing certain tensions because of the need to integrate the element of some entertainment into the teaching process. The necessity to make learning entertaining seems to be invisibly pervading their professional reality. *"Big things are achieved by hard work. There are professions and fields that require thoroughness. It is unavoidable. So when I hear of the need to make things in an interesting way, I see it as hypocrisy. It is pampering the client, or student in higher education. Saying kind of: come to us and you'll see all those interesting things we can offer you. [...] But what happens – this element of entertainment dissolves very quickly if you have to solve a problem in-depth. And universities... by offering these fragmentary courses don't help the person to solve problems. Well anyway, without extensive reading you cannot do anything. Unless you are exceptionally wise or gifted"* (P16T). Despite the changes that have occurred in education because of the dense mediatisation, achievement is still a result of hard and thorough work. Therefore, what is often referred to as "edutainment" is in fact a double-sided phenomenon: edutainment as frivolity and edutainment as engaging learning. Engaging education should be seen as education that nurtures curiosity towards the external world, not something delimited to operational technological artisanry.

Another complex implication (that is vitally important in becoming media literate) concerns the awareness about how our social networks and our preferred sources that we have become accustomed to can encircle and encage us within our personal interests and our groups with which we share the same interests and that reinforce our held views. The danger lies in losing the possibility of encountering the unexpected, some spark that would ignite new insights and curiosity: *"I see one more danger in befriending too closely your interests, your group. I mean you are boiling in your own stew and imagine it is all one truth. But ... in fact you need some knowledge to access all those filters. Meanwhile the user is accustomed to one particular model of using an information system or programme and he is not too inclined to change the habits"* (P16T). Hence, curiosity has to be nurtured very purposefully by attempts of both teachers and learners. Though being curious is in some way an in-born trait, it still can be and has to be sparked by conscious efforts in order to

step out of one circle of interests and sources imposed by the little known search algorithms used by such popular search engines as, for instance, Google. *The Sandglass* depicts visually how awareness about merging of entertainment and learning and the propensity to get enclosed within one's circles of interests can be raised: as the dimensions of the two axial categories, MORPHING and ANCHORING, are both positioned on the axe of the Sandglass, they maintain an obvious connection with the properties of the dimension of "Critical appraisal of information". One of the properties of critical appraisal of information described in this research is that of dealing with the unexpected and the importance of not rejecting out of hand the opposing viewpoints. Bearing in mind the propensity of our social networks, trusted sources, and search engines to enclose us within the personalized content, it is essential to learn to consciously engage in idiosyncratic thinking in critical appraisal of information in order to break out of the usual and face the unexpected or different. Comparing different sources has been pointed out as a key stage in critical appraisal as well. Thus comparing also should be done by engaging in idiosyncratic thinking as well.

A media literate person knows more than just to use gadgets operationally and enjoy the supposed simplicity they have brought. Or, to be more exact, a media literate person is constantly and wittingly improving or "honing" his or her information searching and appraisal skills and is willing to know better the media that he or she employs for his or her assignments. Some research participants have mentioned the experienced gap between the types of high school assignments requiring much memorization and rote learning and university assignments requiring more analytical skills in problem-solving and much diverse and multimodal reading requiring critical appraisal skills: *"When there is no need to memorize that much and later retrieve, when they have to analyse serious complex problems, that's when we are faced with their inability to know where and what to search, what criteria to apply and, above all, whether to trust the material found"* (P16T). Thus, it is necessary to bring media education into the focus from the very start of studies at university, i.e. for every teacher, to put aside the preconceptions about students' being skilful enough users of media and to initiate discussions with students. Therefore, getting used to analyse and reflect upon one's use of media constantly is particularly relevant in the context of the increasing granularity and fragmentation of knowledge construction under the conditions of the ubiquity of the Internet and new communication media: *"What I have noticed in my students is that they cannot distinguish trustworthy information from untrustworthy. Eh... as we've said... there is this information saturation. And saturation of tools that can be used. And of online information media of all kinds"* (P17T). Being able to distinguish between trustworthy and not trustworthy information has been made even more difficult by "information saturation", "saturation of tools", and granularity of knowledge construction. One more relevant consequence of morphing is the difficulties that learners are facing in locating the primary (original) sources.

Morphing in the world of knowledge and education is also evident in the preferences of students to opt for either traditional print formats or digitalized options (or, in communication, face-to-face or virtual modes): *"I have met various students. Various personalities. Some need to have one particular physical book, even carry it along [...] while others, on the contrary, don't want that at all. And once I thought: this is the diversity of the world. And it*

depends... well, maybe it depends on the lability of the person as regards change. Some people are quick at adopting novelties" (P2F). Changing reading preferences observed by this interviewee reflect how the increasing variety of media available for information searching and knowledge construction is forming our preferences and habits. The co-existence of several reading modes (print, screen, or a combination of both) and preferences of communication (face-to-face and virtual or a combination of both) is a matter of the ongoing human-media symbiosis, of learning and work activities merging with entertainment due to the constant presence of gadgets with the Internet connection, and the subsequent increasing granularity, fragmentation and mediation in constructing knowledge about various phenomena in the learner's world.

Therefore, seeking media literacy is an essential goal that should be brought to the fore in education at all levels and, as regards higher education, it should be always kept in mind and continued to develop through small practical steps in carrying out assignments and continuous thinking about whom we grant the power to construct our worldviews.

Anchoring and media literacy

While morphing is seen as both an internal and external process, in large part it implies transformations in the external environment affecting our thinking and actions. ANCHORING refers to particular attempts of individuals and educational institutions in facing the morphing reality and coping with one's assignments. *"Because they [students] have got used to the world where information is accessed quickly. But I think we should not forget that there should always be a scaffold. Having a scaffold opens you ways to do whatever you prefer. But there has to be a scaffold"* (P12L). Though the advent of the Internet has essentially changed our lives (especially Web 2.0), the mission of education has always remained the same: to enable and to empower an individual. Therefore, ANCHORING is seen as extending through three dimensions: (i) re-thinking educational institution (Fig. 4 on p. 102); (ii) critical appraisal of information (as it is accounted for by students, teachers, and educational technologists from their practical perspectives and observations on their daily activities) (Fig. 5 on p. 116); and (iii) the ways of coping (Fig. 6 on p. 142) with all component parts of what has been presented as *The Sandglass* in this research (Fig. 7 on p. 165).

One of the challenges that an educational institution has had to face for some time already is that of aligning the institutional educational world with the learner's lived world outside the educational institution. In the context of higher education, this is reflected in the discourse and attempts of institutions to make studies engaging for their current students and attractive for would-be students in terms of openness to innovations. It is also reflected in the public discourse and such phrases as "bringing contemporary minds" to educational institutions, "the needs of the millennials and generation Z", "increasing expectations from teachers" or "failing to meet students' needs". Much of such discourse produces anxiety and tension especially for teachers. However, the line of thinking that can help reduce the tensions is analysing the movement inside the real sandglass: it stops at a certain moment, but with a simple bottom-up twist everything is put into motion again. The educational world today should be viewed similarly: any assumptions that a mysterious generation Z has been entering the educational world and teachers are left with little

remedies to approach them should be left aside as producing anxiety but solving little. Humanity has been very creative in adopting novelties throughout its development. Thirty years is too little to understand in-depth what is going on, especially when the Internet has produced so many radical changes and is itself changing rapidly. Most importantly, therefore, is not to view the teaching profession as some artisan profession requiring well-trained manual skills; the teaching profession, on the contrary, has been always facing the need of adapting to new realities. Besides, seeking professional fulfilment for teacher today implies namely seeking media literacy for themselves and for their students.

In today's context, teacher's role retains its importance in both face-to-face and distance education: the research participants have accounted for multiple cases when they prefer face-to-face communication, teaching and consultations for better comprehension. A very significant part of teaching today (even more so in higher education) concerns the awareness about information searching strategies and knowing one's media. This awareness, as the research data has evidenced, starts with rejecting one's preconceptions about young people mastering media excellently because they were born with them (thus producing fears of some teachers who have doubts about their own skills and thus resort to not knowing how to deal with media). In many cases, the mastery of media is illusionary because it is basically operational: *"A common tendency is students' imagining they control information search perfectly"* (P16T). What is more, students' understanding of what working with information means. A common misconception brought from secondary education is that any course in information search is a course about operational level skills: *"At first, to tell you the truth, I thought that it was going to be a course about working with a computer. Something like... using certain functions that I do not know and I may need to know in the future as a translator. But in fact it was lectures about the Internet space, protocols, threats, viruses and reliable information search. And similar things. Such general things"* (P9S). What is referred to as "general things" is actually knowledge and skills in higher-level use of media that can be transferred to any other activities that a student might need to engage in. When asked to think about the exact things that they had been taught at high schools, research participants gave very similar accounts: *"We were not taught about that [information appraisal]. Neither about information search. Answering your question now – we had this great course at the university on information systems. We were taught about information search in purely specialist legal websites. It was very useful to find out about the Department of Statistics. But we have never heard of such things at school. Neither in Informatics classes nor others. For instance, before that I thought that Informatics and information systems are similar things. But during Informatics classes I only learnt to prepare a nice Word document. And now we have learnt a really useful thing"* (P11S).

Therefore, educating students to become media literate, i.e. skilful users of media (above operational level) and knowledgeable users of information are important aims of higher education. The significance of higher-level skills and knowledge is reflected in the excerpt below: *"I really like what we are taught. When I now read a book after all those study years, I read differently from when I was a school-girl. I analyse sentences and I think. What can be implied by such a simple sentence? I think about the original sentence. Why is it translated like that? I find out who the editor is. Look at the year of publication. Sometimes I read and*

think like that: wait man, were there telephones at that time already? I find it out and see that yes there were. I do things in-depth now. At least I try" (P10S). Having learnt to analyse texts in-depth is a vital competence for a student. Becoming agile to details and learning to reflect upon them leads to a responsible approach to texts that form our worldviews and actions. Most importantly, any purposeful attempt by a university teacher at raising students' awareness about the role of information and communication media in their lives in every university subject can "trigger" transfer of learned things into other subjects: *"I now, for instance, apply what I have learnt in the course on Information Systems in other subjects"* (P11S).

Critical appraisal skills are particularly relevant as part of transferable knowledge and skills across subjects and activities. Critical appraisal of information is difficult when learners have been taught to think critically only sporadically, in some subjects, as the research participant states: *"We were taught to think critically about sources by our history teacher"* (P11S). Therefore, constant reflection on one's approach to information search and encounters with critical appraisal of text quality is a necessary step in the learning process. For teachers, it is vitally important to resort to various ways of helping students to become aware of the possibility of getting professional advice of librarians: *"This semester we have been instructed [about information search]. Because our yearly paper is integrated in our subject of theory of language for specific purposes, our teacher invited the head librarian to instruct us about effective search. We took notes and now we remember. That's it – one seminar was enough to learn that"* (P11S). Thus, re-thinking teacher role is very important in relation to re-thinking how learning occurs nowadays and in relation to critical appraisal of information. Learning has extended the formal education settings in multiple directions. As regards media literacy, much of knowledge is acquired via a person's communication with one's colleagues, acquaintances in daily life, or relatives in social media: *"I don't know who taught me. Maybe it was a colleague who told me "you need to search Google Scholar". Or another thing that is more... I don't know how to say... more official"* (P18S).

Keeping track of the events and the professional assistance of academic librarians offered by a university's library has emerged as a time-saving and reliable way of coping with the challenges of indeterminacy of the virtual information world: *"You see, I follow the [...] library news in my Facebook account. I see what happens there. If there are new seminars, I see the information. As I've told you, one has to learn to systemize one's information flows. This is so... because everything is in one place. Then people don't have to search different websites to be informed"* (P11S). As evidenced by this excerpt, an advanced use of social media that are primarily used for personal communication outside formal educational institution implies employing the social media in becoming a better informed user of information.

Importantly, the entire Sandglass implies a continuum of inter-connected processes, updating one's knowledge and developing media-literacy related skills. Coping with one's assignments has been viewed as occurring in the background of information "noise": *"This noise is always attacking us. But again... if you are expert enough in a topic, you recognize the names, the people, the publications, the books that serve you as road-signs. One of the characteristics of the expert knowledge, to my mind, is discerning the people and the texts that you can read or should avoid"* (P16T). Therefore, the signs of effective coping with informa-

tion "noise" provided in the account above are being "expert" in "recognizing the names, the people, the publications, the books" to be trusted or not. Thus, the university teacher role is also related to guiding students about the trustworthy sources and names. As obvious as it may seem, though, this aspect is often unduly ignored because of what has been referred to in this research as failing or not being aware about the necessity for teachers to re-think their attitudes to adult students when they are taking their information literacy and media literacy skills for granted. Even more so, this aspect seems indeed problematic in the context of merging entertainment and education activities and presumably later mental maturing of people under the conditions of the symbiotic processes of the human-media interaction.

This is why media literacy is always a matter of education aimed at enabling and empowering an individual. Technological determinism is deprived of its arguments when the human agency is brought to the fore: *"Technologies without a human being are nothing. At least I think so. But if a person himself is subjected by technologies willingly and becomes enslaved, then it is a different thing"* (P14L) In other words, what leads to empowerment of a learner is namely knowing media used in knowledge construction well above merely operational level. Therefore, critical appraisal of information is always related to an informed use of media. Critical thinking as "independent thinking" is the core of critical appraisal of information. "Independent thinking" is the outcome related to tackling "the effect of horse blinkers" (P14L): if media employed for communication and knowledge construction in multiple activities are used unwittingly and on the basic operation level only, an individual is no able to step outside the narrow technologically-determined track and is therefore living in a reality constructed by sophisticated but little known search algorithms. This is why "independent thinking" has come to be viewed as an essential element of what is referred to as critical appraisal of information in this thesis.

The third sub-category of the ANCHORING category has been termed "Coping". First and foremost, coping is a concept permeated by the conception of freedom that has been associated with the realm of the internet world from the very emergence of the internet. Viewing the internet in the presumed light of freedom that it has brought is in clash what has been described as "the effect of horse blinkers" in the previous paragraph. Therefore, the symbiotic relationship between humans and media is also a matter of the balance of the supposed freedom that media have brought and the actual freedom that an individual can enjoy because of his or her actual media literacy skills: *"I agree that nowadays prohibition is nonsense. But again if a first year student uses just anything, it is not good. We somehow have to find this balance between good books, reviewed, established authors, and... and that freedom. Because freedom can be abused. That's bad. Or maybe you can do it this way: maybe not require those three basic books, but then one always has to read more sources to have a broader outlook"* (P14L). Freedom of choice, thus, can be truly enjoyed due to raising awareness because freedom of choice is difficult (though the convenience and the ubiquity of communication and information media may create a contrary impression) in the indeterminacy and chaos of the virtual information world.

Therefore, coping depends much on a helpful cooperation of teachers, learners, librarians, educational technologists. Mutual helpfulness is essential in facing such tendencies as

opting for simplicity in dealing with assignments or merging of screen reading and paper reading entailing preferences for short and simple texts in knowledge construction. This is why learning is often fragmentary and entailing only "scratching the surface" of multiple online sources. As pointed out by one of the research participants, we are often unwilling to engage in studying good philosophical texts because of "misconceiving difficulty of philosophical texts" (P14L). The research participant does not mean that all philosophy texts are easy for students; rather, she implies that coping and engaging in more in-depth studies of serious texts depends much on an appropriate selection of texts by teachers and orienting students towards more in-depth investigation by diverting them from the propensity to opt for the simplicity of doing things via media (the above quoted research participant in this particular case referred to such texts as Plato's text on the cave allegory).

Another issue pertinent to coping is considering the different modes that reading, traditionally a linear activity of reading and comprehending the meaning of characters composing a text and comprehending their meaning), has acquired due to the impacts of screen technologies. Lengthy reading of linear texts is being replaced by fragmentary multimodal reading which has the tendency to become vertical, when lines are not read to the end but rather skimmed quickly by searching key words or paying more attention to the left side than the right side when reading a hypertext or inferring the meaning of a text from its visual representation (such as photos or illustrations). Therefore, this may be related to lessening amount of multimodal reading done in the traditional sense and the increasing amount of reading done on screen and online. This is why, according to one research participant, it "mastering both slow and quick reading modes" is necessary (P12L) (this research participant sees the quick reading mode as the fragmentary mode characteristic of hypertext reading). Therefore, it seems unsubstantiated to state that young people read less nowadays; rather, possibly, they read differently and they read mostly multimodal texts involving less linear presentation and more visualisation and granularity. Considering changing reading preferences of today's learners may be helpful for educationalists in understanding how learners cope with their assignments.

Bearing all of the above in mind, it seems understandable why university students are very willing to take introductory orientation courses at the beginning of their studies. The most useful part of these courses is reported to be the one introducing information search strategies and the potential of such professionals as academic librarians or thematic librarians to provide assistance, support and guidance and share valuable knowledge about how information is organised today. Last but not least, teaching about correct citing and referencing seems to be an essential important part of an informed and conscientious treatment of information a student adopts in carrying out his or her assignments. The research participants often stated lacking good knowledge about correct citing and referencing because of not being taught about this in high school: *"These requirements are either not present or not perceived as important for school pupils and even children. But universities are rather responsible in this regard. Because there are certain sanctions such as expulsion from university [for plagiarizing]"* (P9S). Despite of the credit given to universities for paying attention to citing and referencing norms, an unwelcome tendency is reflected in this excerpt as well. When responsibility is related with sanctions, it loses a vitally important aspect of

free will and conscious inner drive. Therefore, the approach to plagiarising should stem from other incentive, not fear of sanctions. Most probably, what this research participants referred to as learning to do advanced search can be related with raising awareness about the pitfalls of plagiarising, especially in the indeterminate realm of the internet.

Re-thinking media literacy in higher education

This final section is focused on the insights about what media literacy means for the research participants. It must be noted that the term "media literacy" was not pointed out directly as a key notion to think about and to explain for the research participants as the term itself is rather diverse and its treatments vary across multiple sources and multiple authors; rather, the research participants were asked about the many inter-related aspects of their actions and attitudes regarding the complexity of employing information and communication media for searching answers to one's questions and carrying out assignments. Thus, media literacy in this research is, first and foremost, defined through the eyes of the research participants and stems from their personal experiences and encounters with the challenges of densely mediated exposure to reality.

Most broadly and abstractly, media literacy is seen as a human condition stemming from the necessity to construct one's knowledge on fundamentals as a secure ground. Being media literate is a realization of a natural human "quest for personal liberty and happiness" (P14L). This seems to be obvious in the context of the experiences of the research participants related to their use of media and the emotions or feelings (such as stress, tension, tiredness, or even claustrophobic experiences) reported by the interviewees as accompanying their intensive exposure to mediated reality. Another interviewee sees literacy in general as a human and "very humanly" right: *"I see literacy as advantage that should be even seen as more... like a human right, not merely an advantage. Because every person needs this very, very humanly right"* (P11S).

"Comprehending the purpose of technology use" (P16T) is an important element of becoming media literate. As regards the most popular search engines named by the research participants, it also implies being aware of the primarily "commercialized nature" (P16T) of the engines. What is more, "comprehending" also implies understanding the psychological and cognitive impacts of media use: *"Not only getting to know the technological tools, not only setting up limits to the use, but also answering the question from the psychological cognitive perspective about what is happening with people"* (P19T). Further on, the research participant explained what she implied by psychological and cognitive comprehension: comprehension starts with understanding of the intrinsic personal evolvement conditioned by symbiosis with media.

An important part of being literate today is ability to cope with the information abundance and the indeterminacy of information sources and their quality. The research participants (students) have referred to the necessity of a systematic and integrative teaching about information appraisal and referencing. A related problematic issue has emerged from the accounts of the interviewees where they recount occasions when they experienced losing track of their initial searches or being unable to determine (or dig as deep as) the primary original sources of information. From a teacher's perspective, coping with the

challenges would be most effective if media education (with media literacy as its outcome) extended through all stages of education by "connecting all stages of education (P19T). It is important to realize that users normally know only the surface of their media but it does not mean curricula should integrate specific media literacy-focused subjects. The implication of the data focus more around re-thinking methodological approaches within any subject and across subjects towards raising transversal media literacy rather than introduction of new subjects related specifically to media education. Importantly, medial literacy is achieved through constant daily practice in multiple activities that at some point becomes a habit: *"There are so many small things that you start seeing automatically"* (P12L).

Naturally, education should be based on many of those "fundamental subjects" that are oriented towards educating a broad-minded individual: the removal of such subjects as philosophy or logic from curricula impede achieving the aims of educating a media literate individual and "responsible citizen" (P14L). The complexity of the literacy concept means that it has to be viewed from a broad perspective: *"It's not that simple. Just searching. Searching is just a tiny, tiny part of it all. This thing – philosophy, critical thinking and information search – has to be started to be taught at high school already"* (P12L). With a strong basis, therefore, anchoring – the second key category in *The Sandglass* – is significantly facilitated. But, most importantly, media literacy is achieved through small daily attempts of knowledgeable teachers in any subject and all levels of education. Otherwise, sporadic attempts at pointing out the lack of critical appraisal of information and critical thinking in some activity may be produce dissatisfaction in learners: *"[...] what is more, [they] react very sensitively when you are trying to explain what critical thinking means. So I think it should be already started at high school – working with information. And then I ask myself who could teach that. I think it should be included in all subjects"* (P14L). Essentially, critical thinking is the core of media literacy and, just like media literacy, works best when it is seen as transversal.

The viewpoint of policy-makers regarding what literacy is today seems substantiated when they state that "introducing new conception of literacy politically" (P23M) would render little if it is imposed from above on those who are directly involved in the educational processes: *"The bureaucratic regulations are a kind of a forced tool to draw attention. But... eh... looking at it from the ministry's perspective, there is not much else we can do. Because all we can do is to prepare regulations.. eh.. a base... that would be obligatory and, so to say, unpopular, enforced"* (P23M). Thus, regarding the ways of achieving media literacy seem to be two: the bureaucratic regulation (seen as unwelcome forcing) contrary to raising awareness. On the contrary, media literacy is achieved by personal re-thinking of the role of information and communication media, analysing the symbiotic relationship between humans and media and its impact on habits, thinking and actions, and, from a teacher's perspective, by re-thinking methodologies and preconceptions such as the much discussed preconception in higher education of students being sophisticated users of media and, thus, not needing any guidance regarding how they are employed in knowledge construction. Such a viewpoint is reflected in the following quotation: *"I think students in their last years of high school should already be informed about such things as Google Scholar. I did not know about that. And I did not know that there is so much useful information there.*

Should be informed that every library has its own Internet sources. And in general about databases where information can be found. That Google is not... everything. That Google is not the main source. People are not taught about finding information. This is ... the biggest problem. They are not taught to present that information correctly. And yes, I think that they should already be taught about that in the last years of high school. And once they've learnt that, they will learn to systematize their own information and technologies will bring them benefits, and not anger, dissatisfaction, some negative emotions" (P11S). Empowerment of an individual thus implies a kind of immunity to the negative impacts experienced because of the impacts of mediated exposure to reality: *"As I've already told you, people have to be taught about discerning facts and truth, different websites at school already. This is the way to learn to systemize your information. Then you know what you need. Then you are able to resist the negative impacts"* (P11S).

Overall, a willingness to know more, inquisitiveness and curiosity are very important in becoming media literate: *"We shouldn't only delimit ourselves to school curricula. [...] What we in fact need is more curiosity, more wanting to broaden one's knowledge"* (P14L). Building knowledge is given impetus by curiosity but it is made difficult because of the natural human inclination to enjoy the facilitation that media have brought or the feeling of security that is experienced by everyone at some point when it seems that one has enough knowledge about things: *And it is easy to understand why. Well I myself think as I am aging, "Why the hell should I worry about all this and try to comprehend? At my age I already know it all and I've been doing rather well so far". And there are so many people like me"* (P23M).

Finally, in the age of the increasing importance of social media in knowledge construction, an important attitude is willingness to challenge the crowd thinking: *"They trust the most popular search results. But most popular does not necessarily mean the best. But you don't think about that. And it shows. From what they say. That this is what many people think. What many people say, etc. But the crowd can be mistaken – 3 million, 10 million. But we don't think about that. This is what I see as bad"* (P14L). Collective thinking is not to be identified with independent thinking, according to this research participant. Under the conditions of the overabundance of information, as one research participant put it, brainstorming on a blank pages may help in crystallizing your personal viewpoint and it is always a good idea to start investigating a topic from a blank page because what one enters at a single click of simple internet search is an amalgam of multiple sources, authors, views where the original sources are often impossible to discern.

CHAPTER 5. DISCUSSION

Skills and habits exist side-by-side; therefore, for us there is nothing more inviting than opening the fan of possibilities as wide as possible. Has photography killed painting? Television cinema? So let's enjoy touch pads and other assistive reading gadgets that provide us in one single screen with access to the universal library that is becoming digital today.[8] (de Tonnac, 2013, p. 6)

Media literacy subsumes both skills and habits that are referred to as co-existing side-by-side in the quotation of de Tonnac. The densely mediated, increasingly more digitalised and virtual environment of knowledge construction has resulted in a very close approximation of the skills we acquire to survive under densely mediated conditions to habits that are difficult to subject to critical scrutiny and re-examination. In addition, the symbiotic human-media relationship that has been described in the theory of *The Sandglass* implies the hidden feeling of comfort of having media that open us the supposed immenseness of the digital realm of information close at hand at any moment. This closeness has radically changed our ways of knowledge construction and communication. The theoretical perspective of symbolic interactionism offers a suitable framework to account for the phenomenon of media literacy and the processes that education is undergoing today. From the symbolic interactionist perspective, human actions are determined by individuals' interpretations of other people, their actions and motivations, and, consequently, they result in particular constructions of self and the world. Charmaz (2014) points out that, "It assumes that language and symbols play a crucial role in forming and sharing our meanings and actions. Symbolic interactionism views interpretation and action as reciprocal processes, each affecting the other." (p. 262). Interpretation is an essential part of how individuals make decisions, take action in tackling their tasks (or assignments in education), build their relationships with other individuals whom they encounter in their daily activities (for instance, in educational settings), and communicate. Seeing interpretation and action as reciprocal processes is necessary if one seeks to account for the motives behind actions in knowledge construction, the choices made in the indefiniteness of the internet information, the changes in the ways learning occurs today, and the experiences that individuals share with the researcher about their attitudes, feelings and emotions, viewpoints and explications of their experiences pertinent to digitally mediated knowledge construction.

On the meaning of media for a higher education institution and an individual leaner

Blumer (1969) maintains that "[...] the meanings that things have for human beings are central in their own right" (p. 3). The ubiquity of internet, social networks and social media, transfer of learning and teaching into the virtual space, shift in the authority of information sources, fragmentation of knowledge construction, changing reading modalities, multimodality of texts, the increasing importance of visual representation of information and the world, merging of learning and work with entertainment – all these things have radically transformed knowledge construction and learning. What is more, these things have become

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8   My rough translation from Lithuanian.

an inherent part of knowledge construction and learning, or, in Blumer's (ibid.) terms, the meanings of these things for learners today "are central in their own right". The significance of these meanings and their implications for education are best revealed by taking into account the three premises of symbolic interactionism that were formulated by Blumer (1969): (i) "[...] human beings act toward things on the basis of the meanings that the things have for them" (p. 3); (ii) [...] the meaning of such things is derived from, or arises out of, the social interaction that one has with one's fellows" (p. 3); and (iii) "[...] these meanings are handled in, and modified through, an interpretative process used by the person in dealing with the things he encounters" (p. 3). When learners today prefer those modes of learning and knowledge construction that are engaging (i.e. they have meanings for them in Blumer's terms) and when teachers have to search for those modes of teaching that are engaging for their learners, this commonly implies incorporating elements of entertainment into the processes of learning and teaching, and these elements of entertainment today are necessarily mediated, multimodal and dominated by the visual mode of representation.

Social interaction has long extended the physical boundaries of face-to-face communication. Media have extended the temporal and spatial boundaries of human presence. Therefore, some researchers define human existence as "telepresence", i.e. "perceptual illusion of nonmediation" (Lombard & Ditton in Campanella Bracken & Skalski, 2010, p. 3) or "technogenesis" (Hayles, 2012) that implies the changes in society conditioned by media. Today, interaction is strongly subject to mediation: if it is not mediated to a certain extent, then it is not seen as a full-fledged interaction. Dewey (1980) noted that we are constantly experiencing something because the interaction of a live being and its environment is an inherent characteristic of life. Even a purely individual experience is thus seen as something dependant on the interaction with one's environment. Even more so, the interpretative process that an individual engages in in interaction, learning, and knowledge construction has long extended the singularly individual boundaries: today individuals build their knowledge mostly on the basis of information available to them in the realm of the internet (often in social media) in their digital gadgets that are always close at hand and that can be consulted at any moment for almost any query. This is why the flow of time is represented metaphorically by *The Sandglass*: just like the traditional linear reading of printed characters does not any longer define how people read texts today, the flow of time is no longer possible as a linear timeline only. Granularity of knowledge construction is identical in some sense to the fragmentation of once continuously linear uninterrupted event into multiple temporal events engaging multiple actors. This is reflected, for instance, in how the temporal singularity of such previously uninterrupted event as a classical academic lecture – which was once read by a professor, the single authoritative source of knowledge at that continuous 1.5 hour spoken event – has been replaced by the virtual presence of multitudinous other sources. Among such sources could be, for instance, a short YouTube video shown during a lecture (in many cases because lecturers are required by their institutions to introduce multimodal presentation of information to make their lectures engaging), or it could be students consulting multitudinous (some undefined experts among them) sources online in their gadgets simultaneously while attending the lecture and hearing what is being said because of their multi-tasking abilities).

Since the advent of the internet in the 1990s, and web 2.0 in 2000s in particular, educational institutions have been facing the challenge of adapting to and even adopting "the rules of the game" imposed by media. Thus the specifics of the "morphing" reality have conditioned how an educational institution has been seeking to "anchor" itself in the changing educational reality. The institutional requirement and the necessity for teachers to transform their methods of teaching and modes of knowledge delivery and building involve much of interpretation on all sides of what the educational world has become today. The interpretation, consequently, afterwards results in particular actions taken in problem-solving, for instance, searching for solutions of coping with one's assignments.

Castells (2005) drew attention to the tensions between individuals and networks and assumed that, in the 21st century, the development of social and political institutions would depend on how successful coping with these tensions would be. The "Re-thinking the institution", a sub-category of the anchoring category in *The Sandglass*, subsumes certain aspects of how an educational institution has been tackling the need to adapt to the changes brought by the technologization and mediatisation in knowledge construction and the changing roles of teachers and students in it. The extensive use of VLEs is often referred to as what educational institutions have taken up in meeting the challenges. However, a VLE in itself bears much potential to exert control over the learning process, and control has always been an inherent characteristic of most of social and institutional structures. Resolving the tensions between institutional attempts at retaining the power to control the educational processes on the one side and the increasing learner autonomy on the other side are causing major tensions in the entire educational realm. Whitworth (2009) notes that the autonomy of the learner (though he refers to pupils in secondary education, his observations also can be applied to higher education) is not what an educational institution is indeed aiming at:

> Pupil autonomy is "not the dominant characteristic of secondary education" (Tanner, in Kennewell et al., 2003: p. 11), and despite the potential of the Internet to free pupils from the "controlled learning environment provided by schools" (Tanner, in Kennewell et al., 2003), learner behaviour is often quite rigorously controlled by National Curricula and associated assessment regimes. Assessment is a significant means by which values can be embedded into education: assessment strategies usually make very clear statements about what is to be valued (graded highly) and what not. Anyone who has worked as a teacher or lecturer will agree that it is not always easy to persuade learners to do things that they feel will not contribute towards their final mark. While it's unfair to say this is true 100% of the time, strategic learning is something every learner does at some time or another – not least because it is a useful step in information filtering. Making it known what sort of knowledge or experience will be rewarded in the final examination is therefore a powerful way of shaping learner behaviour. (p. 91)

The educational institution draws much of its power from the structuring of knowledge into institutionally defined disciplines and its delivery and assessment in an institutionally structured way. There are certain tensions here: the merging of learning / work with entertainment (a phenomenon that is conditioned by the very nature of media and that is spontaneous-

ly taken as very natural by learners today because of the symbiotic human-media relationship) has resulted in the discrepancies arising out of the learner's necessity to co-exist in two worlds: the formal institutional and their real, lived world outside physical institutional boundaries. Some researchers (Grigas et al., 2016, p. 213) note that media literacy concerns resources of daily information and awareness about specific features of media while information literacy is more concerned with academic information (though both literacies share their focus on key skills of individuals who are capable of making decisions regarding the use of information). The tendency for the merging of activities that were previously associated with leisure and the activities related to learning cannot be ignored and should be taken into consideration as learning (as a phenomenon and process) also needs re-thinking. Crisell (cited in Rustin, 2016) notes that "Traditionally media have been associated with recreation, and there is a general assumption that watching films or television involves less intellectual effort than reading a book." This association is not relevant nowadays because knowledge construction has extended formal institutional boundaries and because it has become densely mediated. Besides, much of knowledge construction has extended into the realm of social media. The participants in this research noted more than once that social networks are used by them during their learning activities because such resources are usually present in their gadgets while they are studying. For instance, research into perceptions of use of Facebook in higher education indicates that students prefer Facebook in many study-related situations (for instance, consulting their teachers) because Facebook facilitate interaction and make learning attractive (Ellefsen, 2016).

What is more, as our culture is becoming increasingly more visual, merging of entertainment and learning can also be explained by the preference of contemporary learners for the visual representation of knowledge. The role of visual representation in knowledge construction may also account for the preference of some students (those who want to study materials more in-depth) to print out these materials: engagement with the visual representation is traditionally related with entertainment while extensive linear reading is related with work and learning. McLuhan (2003) made a distinction between the linear mind and the mind shaped by electronic technologies. This observation is relevant in the context of those accounts that point to the difficulty of retaining attention while reading on screen. Strains on vision caused by screen reading may be substantiated, but they do not seem to be the determining factor why deep reading and learning is related with printing out materials. That is, preference for more visual representation or preference for printing out materials are conditioned by the ongoing symbiotic co-existence of humans and media and individual differences in how strong has this symbiotic relationship become.

Thus much of the tensions in the educational settings arise out of the conflicting preferences of formal education institutions (building on their tradition of classifying knowledge on the disciplinary basis) and the preferences of the contemporary learners to merge their learning activities with what was traditionally seen as leisure and entertainment. Downing (2005) refers to structuring of knowledge into disciplines as "institutionalization of disciplinarity" and "the recurrent power of disciplinary forms of knowledge" (p. 3). However, Downing (ibid.) also notes in what aspects the increasing learner autonomy is evident today: both faculty and students are engaged in "collectively negotiating a wider range of epistemological practices" because of the "real educational needs of an increasingly more diverse population" (p. 9).

Overall, the challenge that contemporary educational institutions are facing today concerns what Pietrass (2006) refers to as education that is done "with the guarantee of transience of knowledge" (p. 11) and knowledge that we build about the world as "improvable sketches" (a concept adopted from Wolff-Metternich cited ibid., p. 11). Flusser (2011) defines the contemporary society as "telematic society" in which hierarchical structures are replaced by network structures and more self-regulation. Therefore, institutions (because of their inclination to fossilize, as Winkler (2009, p. 192) maintains) have been experiencing major tensions in the networking society. Giroux (1989) noted that "crisis in schooling is in part due to crisis in wider culture, which is presented as "spiritual-moral" crisis. The problem is clearly articulated by Diane Ravitch, who argues that this pervasive "loss of authority" stems from confused ideas, irresolute standards, and cultural relativism" (p. 71). When the research participants (teachers) noted that they no longer are the knowledgeable authority for their students and they are experiencing certain insecurities because of that, this may indicate to the need of re-thinking the role of educational institution and the teachers: in the densely mediated world of knowledge construction they have to adopt the role of what Giroux refers to as "transformative intellectuals" (ibid., p. 73). Giroux (ibid.) maintains that teaching has to be seen in a much broader perspective than merely reductionist exercise of authority as "the logic of domination" (p. 75) that is referred to by radical critics and that their authority lies in their ability to engage in a critical discourse with their students (p. 77). In addition, Giroux (ibid.) draws on the insights of John Dewey about "citizenship education", "democracy and schooling in an ethical foundation" (p. 81), "critical intelligence" (p. 83), "creative intelligence", and ""faith in intelligence" (p. 84). Overall, under the conditions of networking, reliance on information found in social media, collaboration online in knowledge construction and increasing importance of collective intelligence, "dignifying teacher's work" (ibid., p. 90) means re-thinking teacher's role as older generations may be losing their authority because their experience in knowledge construction (by mostly engaging in lengthy extensive reading, for instance) is losing value for younger generations of learners who prefer granularity, fragmentation and multimodality in knowledge construction. What is more, Duoblienė (2015, p. 21) notes that the physical school as a specific learning space is losing its significance because learning has extended its boundaries and much of it is virtual today. Nagrockaitė (2016) in her research investigates the differences between the official visible school discourse and the specific unofficial discourse in the virtual space of social networks, mostly Facebook, or the informal physical space, and the transformations in the communication forms of members of school community. Overall, such aspects indicate that the transformations that an educational institution and a learning individual are experiencing are yet difficult to conceptualise and account for. This is so because of the relatively short span of time in which tremendous changes have occurred in the educational reality.

On multimodal and increasingly more granular textuality and interpretation in education

As regards individual attempts at tackling the impositions of the "morphing" educational reality, they revolve around search for information, critical appraisal of information and coping with the information overabundance. The centrality of meaning, language and

symbols in interaction, communication and learning is a quality that applies to all layers of *The Sandglass*. Therefore, media texts that are used in the process of learning and teaching and the ways of using these texts have to be looked at from the perspective of the hermeneutic tradition of analysis of meaning. Viewing hermeneutics and education from the contemporary hermeneutic perspective, Gallagher (1992) maintains that interpretation and education are essentially connected (p. 2).

The multimodal and increasingly more granular textuality is becoming more dominant in the contemporary learning and teaching context. For Ricoeur (2000), a text is an actualised discourse dispersed into various references in the world. The interpreting individual projects his or her meanings into this discourse. Ricoeur (ibid.) seeks to discern the inner essence of discourse and its extensions into further references through an individual engaged in interpretation of discourse. In Ricoeur's theory (ibid.), a discourse has its own structure (but not in the structuralist sense) and inter-related dialectic of two types: (i) the primary dialectic of the event and its meaning and (ii) the secondary dialectic of significance and reference. Discourse is actualised through an event – a proposition whose content is what is said; in other words, the content of a proposition, according to Ricoeur, is a combination of identification and predication, it is an abstraction that depends on the particular whole, i.e. the unity of a dialectic event and its meaning. The entire discourse is understood (perceived) as meaning. Meaning has two aspects: first, it is internal, subjective, implied by the speaker / writer (it is reflected in a proposition's auto-reference, the illocutionary force of a speech act and the intention of the hearer / reader); secondly, it is objective, i.e. it is evident in what a proposition does, it encompasses significance (discourse's "what") and reference (the exterior of discourse, discourse's "what about") (Ricoeur, 2000, pp. 20-30). Reference is the reality at which a proposition is aimed (ibid., p. 93), and referencing is performed by a proposition used (i) in a specific situation and (ii) in a particular way.

In the context of the role that information and communication media play, Ricoeur's (ibid., p. 41) concept of the "semantic autonomy" of a text is of particular importance. As Ricoeur (ibid.) notes, the transforming of speech into writing has made the speaker the author, and the direct relationship of communication has turned into a much more complicated relationship between writing and speech: the entire communicative link was broken alongside the broken spoken dialogic situation. In a written discourse, the author's intention and the meaning of a text do not coincide, and a text escapes its author's horizon (p. 41). Thus, the semantic autonomy of a text brings the necessity to guess the meaning of a text (ibid., p. 89). In Ricoeur's vision, the individual interpreting a text is free to decide what a text means.

Furthermore, Ricoeur (ibid.) sees understanding (*verstehen*) of discourse and explaining (*erklären*) of discourse as making up a unitary process. Inferring the meaning is the beginning of understanding that undergoes explaining and afterwards turns into final understanding, a complex form of understanding resulting from explaining (p. 88). Gallagher (1992) believes that education occurs when a learner widens his or her horizon due to learning and experiencing the things previously not experienced, comparing the experiences with his or her understanding of the world, and thus stepping over one's boundaries and better understanding oneself in the background of the new opening possible interpretations (p. 144). Dewey (1980) distinguished between experience in its primary stage (when we come to perceive

things, but this does not become real experience) and full experience (when the perceived things are understood alongside their diverse aspects) (p. 188). What Ricoeur (2000) sees as the final understanding that is achieved through interpretation resembles Dewey's concept of the experience of thinking (1980) that occurs when we come to or make conclusions (p. 190).

In Ricoeur's (2000) theory, a text is open to everyone. A written text (it is a medium between two events) is freed from its author with its entire situation, it is freed from the primary addressee, and it extends projections towards new readers. Namely at this moment the primary event turns into the universality of significance because of the extended circle of its readers who engage in new events (ibid., p. 106). Thus, the universality of significance and the extension of the dialectic of meaning into the dialectic of the significance of meaning and reference is easily applicable the educational context.

According to Gallagher (1992), interpretation (be it a scientific explanation of the natural world or an attempt to understand another human being through spoken dialogue), is always a certain form of reading. Gallagher (ibid., p. 8) explicates the concept of textuality in Rorty's terms by stating that all is texts, and a text always refers to some other text. In text hermeneutics, the interpretation of a text is an object of deliberations. However, a text can become a paradigm in non-textual hermeneutics as well: an interpretation of a text can become a model to all other interpretation. Therefore, hermeneutics embarks on studying the specific type of textuality that is understood in a broader perspective. Gallagher (ibid.) maintains that Ricoeur, for whom textuality is particularly important, proves that the choice of a particular text as a paradigm can result in distortions. For Ricoeur (1976/2000), a text entails both literal and metaphorical meanings; therefore, a text cannot always be identified with its written expression (p. 326). Thus, Gallagher (1992) further maintains that,

> Ricoeur shows us precisely how taking the text as paradigm can lead to distortions. Thus, in attempting to use a text as a model for conversation, Ricoeur notes, "It does not suffice to say that reading is a dialogue with the author through his work, for the relation of the reader to the book is of completely different nature. Dialogue is an exchange of questions and answers; there is no exchange of this sort between the writer and the reader. ... The reader is absent from the act of writing; the writer is absent from the act of reading" (HHS 146-147) (p. 327).

The semantic autonomy of a text renders many possibilities in the educational context when texts (and awareness about the peculiarities of existence of texts as it is explicated in Ricoeur's theory) are looked at through a critical lens at it is suggested by the implications of media literacy. Seeing understanding of texts as it is explicated by Ricoeur suggests making an assumption that the extension of a textual event into its meanings and references allows making comparisons between different experiences and individual accounts of these experiences.

On the impact of media on learner thinking, habits, and actions in learning

The internet has evoked a new type of thinking that builds on massive cooperation of users in terms of information search, selection, creation, and spread. Mencwel (2016a) notes that the internet would not have spread massively without computers, especially personal ones; however, a computer, no matter how smart, would have remained a simple

calculating machine and nothing more without the internet (p. 9). Hayles (2012), following many other established authors (Marshal McLuhan, Friedrich Kitler, Mark Hansen, Lev Manovich), focuses on how we think today and points out that "[...] we think through, with, and alongside media" (p. 1). Manovich (2009) refers to modern thinking as "externalized thinking" and notes that what was once a unique individual mental process has now become part of the public sphere because the invisible inner processes and representations have been transferred from inside of our minds to the exteriority (p.135). The tendency to "externalize" and "objectivise" the mind has been facilitated by the interactive computer media (ibid., p. 135). Manovich (2009) states that new interactive media evoke our identification with "somebody else's mental structure" (p. 136). Therefore, when the research participants were (i) referring to the indefinability of multiple online sources, (ii) perceiving the un-authored internet information as belonging to everyone because of being free, or (iii) when they explained how they came to read the fragmentary information encountered online by browsing innumerable hyperlinks (by merely skimming and never reading all hypertext systemically but rather reading by selecting bits of this and bits of that) – all these and many more now seemingly ordinary things we do with media texts attest to what is referred to as "externalised thinking" or "thinking through, with, and alongside media" (Hayles, 2012). Even more so, the constant presence of mediated reality has resulted in what some researchers (Serrano-Puche, 2016) point out as "an emotional relationship" between users and their gadgets: "The popularisation of digital technologies has made them a constant presence with the person; so much so that the sensory contact is the first step to elicit an emotional relationship between the user and the device" (p.24).

Postman (1985/2005) has noted that, as a rule, the role of media in knowledge construction is not noticed if we do not think about them purposefully and more in-depth, and drew attention to some of our most ordinary actions:

> A person who reads a book or who watches television or who glances at his watch is not usually interested in how his mind is organized and controlled by these events, still less in what idea of the world is suggested by a book, television, or a watch. (p. 11)

The views held by authors like Postman are often attributed to the media scepticism camp. However, even more sceptic views towards media are held by Baudrillard (2010) who, back in 1970, noted the existence of the law of technological inertia which implies that the closer we approach the real documentation of reality (e.g. direct broadcast aiming at producing as real as possible colours, depth of vision, etc.), the more distant the real world becomes with every new innovation (p. 151). This is evident today, when the globalization and the ubiquity of various media have made it possible to see and to get to know things by overcoming time and distance. However, whether heavily mediated knowledge construction is "real" knowledge of the "real" world continues to be seen as a very controversial issue. Today we have given much power to commercial companies to build our knowledge about the world, but we rarely think about and even less rarely analyse their power to construct our worldviews. Vaidhyanathan (2012), for instance, states that Google has come to be identified with the web itself and has become "indistinguishable from the Web itself" (p. 3).

Media researchers often make a distinction between media like traditional television and interactive media like web 2.0 on the grounds of whether the use is passive (as with traditional media) or active (as with media). Baudrillard (2010) notes that mass communication imposes a certain imperative message: it is segmented *spectacularisation*, an imperative to consume the message (information as commodity) and to adore the content in form of signs (p. 152). Whether the interactive media of today are different from those of the past remains an open question. Pariser (2011) points out that it is common to distinguish between "push technology" (e.g., television which depicts the world without one's involvement in creating the message) and "pull technology" (e.g. a web browser which, as technological enthusiasts believe, "put[s] users in control") (p. 67). But Pariser (ibid.) draws our attention to the problem that "[...] pull is actually a lot of work. It requires you to be constantly on your feet, curating your own media experience" (ibid., p. 67).

The symbiotic relationship that has been pointed out in this research as one of the inherent dimensions of the morphing processes in knowledge construction and learning is undergoing constant development: its depth and scope is evident in our changing preferences for one or another mode of accessing information. The debates over the role, relationship, and future of paper books and digital media are incessant. When Carr (2008) admitted that the internet has become "a universal medium" and "a conduit for most of the information", he also pointed out some of the effects of this medium, such as difficulty of staying focused on lengthy texts, the mind expecting "to take in information the way the Net distributes it: in a swiftly moving stream of particles", or even not reading books anymore. Carr (ibid.) makes a premise that our over-reliance on the mediation of computers in building our knowledge about the world as if "flattens" our intelligence and makes it similar to the artificial intelligence. Batson (2009) in his response to this publication by Carr made an important observation regarding how our culture may be changing from written back to oral, thus as if turning towards the onset of human communication that was initially purely oral:

> But, for us over our thousands of years of learning, the book is the anomaly, not the Web. The book led us to think that one person could write a permanent compilation of truth. Books lived on over the years, separated from their authors, a single voice, implying that knowledge is a thing or a commodity, creating the legal fiction that one person "owned" the ideas in a book as though the author had grown up in isolation from all other humans and all the ideas had sprung, fully-formed, from his or her brain." [...] Books built our culture, don't get me wrong, and have provided wonderful wealth, but ultimately they also undervalued and ignored the natural ways that humans learn: through oral interaction and in a group.

Namely McLuhan's (2003) approach to the role of media in human life has been very influential because of the shift in thinking that it has caused by drawing attention to media themselves, not merely their content. Federman (2004) views McLuhan's theory as very useful today because every technological change in societal life "indicates the presence of a new message" in that this change brings along with it new effects. Winkler (2009, p. 190) notes that media are invisible: the more we perceive the use of media as understandable, the more they are prone to disappear, i.e. we often use them in a spontaneous way, without paying

due attention to media as the means and environment for conveying content. Therefore, focusing attention on the media that we use for communication and information searching is an important aspect of being media literate. But Buckingham (2003) also stresses that, in education, it does not suffice to look at the media merely from an instrumental perspective: teaching today is not merely teaching *with* media or *through* media but also *about* media because they are not just neutral means of searching for information (p. 4). A closer analytic look means overcoming common pre-conceptions and tensions and suggests ways of coping with the arising challenges. For instance, Carr (2008) admits that screen reading has effects on attention retention and decreasing *extensive* reading but also challenges the common concern about the supposed decreasing amount of all types of reading done today:

> Thanks to the ubiquity of text on the Internet, not to mention the popularity of text-messaging on cell phones, we may well be reading more today than we did in the 1970s or 1980s, when television was our medium of choice. But it's a different kind of reading, and behind it lies a different kind of thinking—perhaps even a new sense of the self.

Hayles (2012) also notes that young people do more screen reading of digital texts while the reading of paper books and literary texts is in decline (p. 55). Therefore, the changes occurring in reading modes and preferences for particular types of shorter texts illustrate what McLuhan (2003), Federman (2004), and Winkler (2009) point out in their work regarding the impact of media on human thinking and actions. Hayles (2012) distinguishes three types of reading: close reading (of complex texts, e.g. classics), hyper reading (reading on the web), and machine reading (done by machine algorithms) (p. 11). What seems to become the dominant type is hyper reading. Manovich (2009) notes that a hypertext reader chooses his or her own reading path and, in this way, a reader creates a unique individual version of the whole text (p. 114). For Hayles (2012), "Hyper reading, which includes skimming, scanning, fragmenting, and juxtaposing texts, is a strategic response to an information-intensive environment, aiming to conserve attention by quickly identifying relevant information, so that relatively few portions of a given text are actually read." (p. 12). The data in this research also indicates that the diversification in the reading modes that we engage in today has been occurring because of the symbiotic relationship between humans and media.

Furthermore, Manovich (2009) also notes that the two major principles of organizing data that are used today – the hierarchical system of computer files and the non-hierarchical network of hypertexts – represent the world in two essentially different and even opposite ways (p. 82). Human-computer interface conventions have become very natural and have imposed their logic on the behaviour of users. For instance, namely these conventions may have impacted the way learners use information found online (especially if it is freely available and authorship is difficult to detect) in their own work. Assumingly, getting accustomed to the copy-paste command has intensified plagiarism concerns: this command may have conditioned individuals' perception that what we find freely available online can be used and re-used in creating one's own content. But it would be too simplistic to assume that the technology as it is has become one of the causes of plagiarising. As Brabazon (2015) notes, "This arbitrary and incorrect convergence of plagiarism and the internet has ignited manag-

ers' need to solve academic challenges by administrative means" (p. 14). These administrative means (e.g., plagiarism checkers and detection software used by institutions), in Brabazon's (ibid.) view, are "quick and cheap fixes for teaching and learning" and "plagiarism is a proxy, a strategy to blame the victim rather than consider what has happened to higher education in the last twenty years". Brabazon (ibid.) maintains that, instead of opting for the easiest means that build on the fears of punishment, the right way is to tackle the issue is developing "an information scaffold" that prevents plagiarism-related problems. Brabazon states,

> We displace the neglect of professional development of university academics over twenty years, so that all that is left is to discover plagiarism through software, rather than prevent it (MacDonald Ross 2004) with particular attention to information literacy, media literacy, discussion of academic integrity, curriculum development and multimodality (p. 15).

Kress (2010) believes that, "The accusation of *plagiarism* is itself now becoming an anachronistic term, harking back to a different social, semiotic and legal environment" (p. 21). In Kress's view, notions of text, its authorship and property are understood differently because of the *new principles of text-making composition* by those who create content via the new media and "[...] the accusation of ('merely' or 'simply') *cutting and pasting* is a response that betrays a lack of theoretical work and hence incomprehension about new principles of text-making composition" (ibid.). Importantly, Kress (ibid.) stresses that these principles should not be confused with intellectual dishonesty or theft, but he notes that an individual consumer (Kress sees this concept as a capitalist market term contrasted with the term *citizen* who, first and foremost, adhered to the principles of social responsibility and traditional conventions of communication) enjoys the use of the new digital devices and is guided by the concept of individual choice and "the fluidity of communicational practices" (p. 20). "Global Media and Information Literacy Assessment Framework" (2013) also points it out that "print, broadcast delivery and copyright restrictions no longer define what content and what information can be accessed in the web" (p. 26).

The copying and pasting that in some sense goes on unperceived (and not necessarily involves pre-planned malicious intentions of theft) was often implied in the interviews in this research. The internet realm with its openness and offer of a free access to multitudinous resources has conditioned the changed perceptions of the property and authorship of information especially as regards collective content creation. Manovich (2009) lists *variability* as one of the basic principles of the language of new media: in old media, a person used to present textual, visual and audio elements into a composition or sequence that was fixed in a material form and unchangeable sequence while new media are variable and their content is fluid and changeable (p. 107-180). This feature of variability is relevant to the accounts of the research participants about their preparation for assignments such as creating a presentation with slides. Referencing of sources has become a formal documented requirement that is often not paid enough systematic attention by all teachers. Therefore, we should not merely rely on plagiarism detection software as an effective means of deterring learners from intellectual theft and threatening them with institutional sanctions, as Brabazon (2015) notes. A responsible and conscious approach of educationalists implies

raising awareness about new media and the implications of the symbiotic relationship be-tween them and human beings. As a result, media of information and communication also need re-thinking in terms of the changing teacher role. Importantly, though educational institutions and their administrators ordinarily approach the new challenges (such as, for instance, plagiarism in the context of the digital environment) by the means that can be easily applied (i.e. installing software) there is some institutional recognition of the need of solving the problematic issues on a deeper level. As Wilson et al. (2011) note, "[...] teachers should develop the capacity to evaluate how students interpret media messages and infor-mation from a variety of sources" (ibid, p. 26).

Another effect of mediated knowledge construction concerns the observed shift from writ-ten media towards spoken media that resemble speech more than writing (for example, text messaging). McWorter (2013) notes that human language developed as speech, and speech was the natural media for communication much longer than writing that made literacy the privi-lege of very few people. Parry (cited in Sodeika, 2009, p. 49), who researched how the textual formulae that were created orally are evident the Homeric verse, stated that the textual com-positions that had been conditioned by oral tradition reflect a style that is very different from a composition formed by written tradition. Further on, Sodeika (2009) notes that (i) Carpenter (cited in Sodeika, p. 49) determined that until the end of the 8th century B.C. when the Greeks adopted and transformed the Phoenician alphabet for their own use, the Greek spiritual culture was oral and (ii) Havelock (cited ibid., p. 50) believes a radical change occurred only at the end of the 5th century B.C. when the spoken word was increasingly more often being replaced by script. For Havelock (cited ibid., p. 50), this is evidence of how written medium transforms the very structure of thinking, and namely the written medium conditioned the move from visual thinking (characteristic of oral tradition) to abstract conceptual thinking.

Thus, the flexible human mind adapts to and transforms in the co-existence with new media. Ong (cited in Sodeika, 2009, p. 52) noted that the thinking structures that seem nat-ural to a contemporary person are indeed possible only because the mind has interiorised the written media in the long run. But today, as McWorter (2013) points it out, presumably, our mind is turning once again to what used to be oral culture through the naturalisation to new media of communication that make texting language very natural for conveying information as it resembles speech more than writing.

When the research participants accounted for their strategies of coping with informa-tion overload and the amounts of texts they have to read for their courses, they also re-ferred to reading condensed versions of lengthy literary works available in websites such as SparkNotes. Similarly, the attempts to reduce contents of complex texts and to transform them into formats that have become natural for learners today are evident in such initia-tives as A. Aciman and E. Rensin's *Twitterature: The World's Greatest Books Retold Through Twitter*. In their website http://www.twitterature.us/us/index.htm , the authors maintain,

> Here you will find over eighty of the greatest works of western literature – from Beowulf to Bronte, from Kafka to Kerouac, and from Dostoevsky to Dickens – each distilled through the voice of Twitter to its purest, pithiest essence. [...] Twit-terature provides everything you need to master the literature of the civilised world, while relieving you of the burdensome task of reading it.

What "relieving you of the burdensome task of reading" classics implies is evident in the definition of the concept "twitterature" found on the cover of the 2009 Penguin edition of the book: "[...] amalgamation of "twitter" and "literature"; humorous reworking of literary classics for the twenty-first-century intellect in digestible portions of twenty tweets or fewer". The attribute "humorous" is supposed to relieve the outrage that such an attempt can evoke in the minds and hearts of those who value the traditional paper book, even more so when it is classics. Leaving the emotional reaction aside, it is evident, though, that new media have already caused significant changes in our thinking and preferences. Therefore, in educational settings in particular, it is essential to maintain a balanced approach to the observable changes in learning and knowledge construction. Batson (2009) defines our culture today "the hybrid oral culture":

> We are reading as we speak when we are in a group. We "listen" to one statement, then another and another in quick succession: Our reading on the Web is like listening to a bunch of people talking. It's hybrid orality. We find ourselves once again the naturally gregarious humans we always were. We find ourselves creating knowledge continually and rapidly as our social contacts on the Web expand. We have re-discovered new ways to enjoy learning in a social setting.

In addition, what has to be considered in the context of how learning is changing today is the effectiveness of communication that resembles speech but is "hybrid" because it is combined with the written medium. The distortion in the intended meaning that has been observed by some research participants in their accounts of mediated teacher-learner communication (for instance, via e-mail), is related to what Grice (1975) referred to as "conversational implicature". In this theory, what is said and what is implied in a conversation are not identical. In a mediated conversation, this distinction is even sharper; therefore, conveyed information gets distorted in the long run in communication that is of "hybrid" nature. When these distortions are noticed by the participants of interaction, they are inclined to meet face-to-face to compensate for the loss of intended meanings and to compensate for the gaps in their distance communication (as it has been noted by one research participant, a teacher, who finally had to meet with her student physically to compensate for the inefficiencies in their long-term distance interaction.

On "the hybrid oral culture" in transforming academic library

Batson's (2009) concept of the "hybrid oral culture" also bears significant implications for contemporary academic libraries and their role in knowledge construction. Granularity of texts and their increasing multimodal presentation means that a library also has to become "multimodal" and available in a learner's gadget at any moment. The distancing of library from the learner's world occurred alongside the distancing of the formal educational world and the learner's lived world permeated by the constant presence of the virtual world and its information in their gadgets. Brabazon (2012) believes that academic librarians and libraries were downgraded when higher education institutions assumed that media could replace the physical space for learning. The enchantment with technological applications unwittingly distanced students from the professional input that librarians could offer in reliable knowledge construction. As Saunders (2013) notes, explaining subject cataloguing systems and searching physical and electronic sources are

not the only responsibilities of librarians; more importantly, librarians can "publicize the right to information access", i.e. inform about the availability and diversity of sources, and assist in "developing a healthy scepticism" as a means of confronting potential misinformation (p. 314).

The ease with which learners took up the potentials offered by digital media in search for information can be accounted for by what Seely Brown and Duguid (2004) refer to as "the feeling that the information is somewhere "here" (p. 129). Seely and Brown (ibid.) state, "The traditional library with its massive dusty stacks of paper that resist effective search is one more institution related to paper that makes you want to put your fingers on the keyboard."[9] But contemporary libraries have been changing tremendously while the perceptions of the learners seem to continue to be rooted in what Seely and Brown (ibid.) point out. Another reason for the common misconceptions about contemporary libraries can be found in Alfaro López (2013) who states that libraries' privileging written text has resulted in the marginalization of images while the social space has come to be dominated by visual culture. Therefore, literacy today is increasingly more centred on the visual representation of information. As a result, as Alfaro López (ibid.) maintains, libraries have to become "a platform for promoting both literacy and visual culture" (p. 178). Cline (2014) refers to the new role of academic librarians as *blended librarianship*:

> The concept implies that blending the perspectives, expertise, and skills of instructional design, technology and traditional librarianship will open new avenues of practice and professional development for academic librarians. As university libraries move away from local collection development to providing remote access to materials to support research and instruction, the traditional roles of the bibliographer, cataloger, and reference specialist are undergoing transformations. [...] Blended librarians would help students become more critical and sophisticated users of the vast troves of data in cyberspace. (p. 109)

Nguyen (2015) distinguishes between two models of contemporary libraries: Web 2.0 library and participatory library: the former model is a model of a library which is technology-focused, non-empirical, not involving stakeholders, and loosely woven, while the participatory library is participation focused, empirical, and involving stakeholders. New opportunities for libraries with a particular focus on visual literacy standards in higher education are laid out in Hattwig et al. (2013) who note that, "In an environment in which remixing content and creating "mash-ups" is common practice, it is essential to track copyright and use information as images are reproduced, altered, and disseminated to new contexts" (p. 83). Even more important, however, is libraries' providing support on increasing visual literacy skills such as image interpretation and image creation (ibid., p. 66). This is something that should be taken into consideration in re-thinking the role of a contemporary library that meets the real needs of learners under the conditions of information over-saturation.

On coping with information overabundance, critical attitude towards easily available information, transforming knowledge, and the changed concept of literacy

Overall, coping with information abundance is a vital skill today. Manovich (2009) seeks answers to how we have arrived at the current state of overwhelming information

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9   My rough translation from the Lithuanian edition of Seely and Brown's *The Social Life of Information*.

abundance (p. 107). He believes that digital media have made it possible to create and store an unprecedented amount of mediated data; as a result, it has become much easier to create one's own mash-ups of data and available information rather than search effectively for original data (especially, primary sources) instead of contributing even more to over-abundance of information. As Eriksen (2004) notes, the challenge lies in the ability to distinguish between valuable information and trash, and this means discarding almost all of the available information today and selecting only a tiny portion of what is indeed valuable.

More specifically, the increasing speed of information flows may have resulted in learn-ers' unwitting reliance on the first Google search results, as the research participants often accounted. But the ubiquity of the internet in personal gadgets, the convenience of search engines and habituation to them have resulted in strong preference for quick (time-sav-ing) access to information and fragmentation of information search and knowledge con-struction. Michelkevičius (2009) notes that, though R. Williams criticized M. McLuhan for eliminating the human factor from considerations of the technological impact, the re-searchers of new media continue building on McLuhan in their accounts of the impact of media on the human mind and actions (p.34-46).

In higher education in particular, construction of meaning and knowledge construction should rely on sound critical appraisal of information. Critical thinking and critical appraisal of information are an inherent part of what constitutes media literacy. Albergaria-Almeida et al. (2011) see critical thinking as the core goal of higher education and note that its key indi-cator is "higher-order questioning" which is related to active learning (p. 175). Even more so, Penkauskienė (2016) notes that both creative and critical thinking have a direct and essential impact on individual and societal well-being. Back in 1973, Freire (2000) pointed out that literacy is much more than mechanical skills; for him, literacy necessarily involves raising critical awareness of learners (p. 208). In addition, in his description of the teaching method tailored for his theory, he highlighted the importance of taking into account of the semiotic criterion in teaching (p. 202). In the contemporary context of increasingly more mediated knowledge construction and the symbiotic relationship between the individual and media, the distinction that Freire (ibid.) makes between *integration* and *adaptation* is relevant: in-tegration into context is essentially different from adaption to context in that an individual integrates because he or she can integrate, can choose between options and can bring about change; adaptation, on the contrary, implies that the individual has lost the potential to choose on his or her own and is dependent on decisions made by others (p. 158).

An early systemic approach to the concepts of literacy and learning (that are situated in context and that take into account reflexivity and critical attitude) was provided by Mack-en-Horarik (1996, p. 241) who adapted Halliday's theory of register and genre in defining three contextual cultural domains of learning and literacy: *everyday (functional literacy),* *specialized (reproductive literacy)* and *reflexive (critical literacy).* These three domains are placed in relation to three dimensions: *knowledge/content*, *role/relationship*, and *semiotic*. The dimension of knowledge/content refers to the construction of activities and things and is placed on the continuum of common-sense knowledge, discipline knowledge and critical knowledge. The dimension of role/ relationship refers to the construction of self and reality through adopting various community roles, expert roles and multiple roles. The

semiotic dimension refers to constructions of meaning making through language as part of reality, language for constructing reality and language for challenging reality. Thus, the contemporary revisions of the concept of literacy date back to the decade when the internet was rapidly spreading. Fundamental attempts were made by The New London Group who introduced the concept of "multiliteracies" back in 1996 and subsequently by Cope and Kalantzis (2000), Lankshear and Knobel (2011), and others. About a decade later, in their work on critical media literacy, Kellner and Share (2005) approached literacy by clearly highlighting such aspects of reading, interpreting, and creating texts that imply the inherence of critical approach to texts:

> Literacy involves gaining the skills and knowledge to read, interpret, and produce certain types of texts and artifacts and to gain the intellectual tools and capacities to fully participate in one's culture and society. [...] "Literacy", in our conception, comprises gaining competences involved in effectively learning and using socially constructed forms of communication and representation. (p. 369)

Kellner and Share (ibid.) thus define critical media literacy:

> Critical media literacy involves cultivating skills in analysing media codes and conventions, abilities to criticize stereotypes, dominant values, and ideologies, and competencies to interpret the multiple meanings and messages generated by media texts. (p. 372)

MacKeracher (2004) notes that evolutionary psychologists see learning as "an instinct that develops in all humans without conscious effort and in the absence of formal instruction" (p. 6). Under the conditions of information over-abundance, human reaction to and coping with information overload can be explained by what MacKeracher (ibid.) refers to as learning as a natural process in terms of what it helps us to do: learning activities help us to "reduce the unknown aspects of life to a manageable level". "A manageable level" is an important concept as it may explain why learners often resort to sources that build on collective accumulation of encyclopaedic knowledge but, knowing the attitudes of their teachers towards them, usually avoid mentioning these sources. Collectively accumulated encyclopaedic knowledge raises diverse debates regarding the quality of its information and its suitability for formal education. But it has become an important resource for many users. Therefore, the use of internet sources and collective intelligence sources has to be taken into consideration. As it has been evidenced by the accounts of the participants in this research, such freely and widely available sources of knowledge as Wikipedia, for example, cannot be ignored because they continue to be used though their use often goes unreported. Instead, students should learn about how Wikipedia is created because this knowledge brings more awareness about the nature of the information found in Wikipedia which is not necessarily poor. Today Wikipedia is defined as a research community and "a successful learning community" (Staub & Hodel, 2016, p. 352). Staub and Hodel (ibid.) note that, in humanities in particular, Wikipedia tends to be used as an entry point to more research. Therefore, they state that

> Professors should know what Wikipedia says about their respective subject matter domains because sooner or later they will be confronted with it anyway.

They should look up their subject matter in Wikipedia and briefly address their findings during their lectures: can the Wikipedia content be used as an entry point for further research or should it be considered off limits – an if so, why? (p. 353).

Aycock and Aycock (2008) also point out that the skills of filtering information are crucial in the context of the importance of such sources as Wikipedia for internet users and learners, and that students have to be trained in using internet materials across subjects. Similarly, Simmons (2013) maintains that students should be instructed about the usability of Wikipedia by engaging in constructive critique of existing knowledge and transforming it.

Transforming the existing knowledge depends on critical thinking as well as creativity and imagination. Creativity and imagination are important elements in understanding how we approach overabundance of information and how we tackle the quality issues. The new media have made us consumers of pre-fabricated goods in terms of information use as well. As Manovich (2009, p. 103) states, the automation of media has at least partially removed the person from the creative process. Having transferred much of what Fromm (1990) refers to as an "externalized memory bank" to the repositories of new media (that make information quickly available thus reducing necessity for memorising things) we became part of collective intelligence and collective imagination. Kardelis (in Repšienė et al., 2016) sees collective imagination as a pre-construction that can either free an individual or restrict him or her. In approaching *simulacra* of the mediated reality, imagination can be employed to overcome the *pataphysics of simulacra* (Baudrillard, 2002, p. 176). Kardelis (in Repšienė et al., 2016) regards mediality as problematic because media stand in-between us and objects in our world and both separate and bring them closer. Kardelis (ibid.) further maintains that media become "parasitic" when they provide uncritically-thinking individuals with pre-constructions of reality. Therefore, Kardelis (ibid.) makes a distinction between independent thinking as the cleanest, most constructive, and authentic medium, and the "parasitic" passive imagination that is fed by pre-constructions offered by new media. Therefore, as Kardelis (ibid.) maintains, we have to learn to govern the aggressive media through critical thinking and our self-standing imagination. Creativity, imagination and critical thinking have emerged in this research as important aspects of media literacy. Developing skills of critical appraisal of information make up a vitally important aim of contemporary higher education as coping with overabundance of information (and the challenges brought by digitization of education and learning) is strongly dependent on critical thinking abilities, creativity and independent thinking, as Kardelis (ibid.) puts it.

Finally, media literacy has turned out to be a very diverse concept: media have affected our lives to such an extent that in our ordinary use of media we spontaneously take them for granted because they facilitate communication (which is the cortex of contemporary life); they help us to overcome the hurdles of time and distance (which we have started to enjoy so much that it is sometimes difficult to distinguish the virtual from the real); and they have accelerated the pace of life (due to this, we have to deal with dangerously amplifying amounts of information that we have to process in contracting stretches of

time that we have at our disposal to deal with work and study assignments). Therefore, Hobbs (2010) defines "[...] digital and media literacy as a constellation of life skills that are necessary for full participation in our media-saturated, information-rich society." (p. vii). In Hobbs' (ibid.) conception, digital and media literacy refers to responsible choices regarding information access and comprehension, good analytical skills and knowledge about appraisal criteria, ability to create and reflect, take social action in sharing quality knowledge, etc. Laurillard (2002) analyses in-depth what academic learning (i.e. learning in higher education) implies and notes that neither academic learning nor academic teaching have ever received as much researchers' attention as school learning and teaching (p. 12). Laurillard (ibid.) notes that "Because academics are concerned with how their subject is known, as well as what is known, teaching must not simply impart decontextualised knowledge, but must emulate the success of everyday learning by situating knowledge in real-world activity." (p. 23). In other words, the morphing educational reality means that the human-media symbiosis has imposed its conditions on how learning and knowledge construction occurs: through merging of entertainment activities and learning activities and through knowledge construction that is becoming more granular (fragmentary and multimodal) in nature. What has been called "anchoring" in this thesis is essentially an umbrella concept for the strategies, efforts and ways of tackling the diversity of learning-related issues in the context of higher education. Higher education plays a significant role in tailoring life-long learning skills that students acquired in secondary education and, even more so, in "sensitising" learners' minds to approaching the symbiotic human-media relationship critically and, consequently, beneficially for individual development. In recent years, the focus on the role of media literacy education has been particularly marked: as Jolls (2015) points it out, making media literacy education the focus in teaching and learning leads to students' becoming "self-directed life-long learners capable of addressing any subject" (p. 65).

To sum it up, the research done within the scope of this thesis may support the position of those researchers who see media literacy as an overarching umbrella term for all those specific types of literacies that can be found across the academic realm (Hobbs, 2010; 2016). The terminological complexity is reflected in such approaches as that of Lee and So (2014) who see media literacy as having "a broader scope" than information literacy (information literacy being larger as a field with "a clear but narrow focus on library science and technology") as media literacy "[...] is more related to communication, health-related issues, leisure, effects, and culture" (p. 144). From the perspective of the author of this thesis and the findings obtained from the interviews , media literacy in higher education in particular necessarily implies at least three components: (i) manifold **ability** to locate, analyse, assess the quality of and appropriately communicate information; (ii) **critical appraisal** of information that is much deeper, sophisticated, and reflected than in ordinary daily settings; and (iii) increasing **awareness** about the nature of media of communication in regard to knowledge construction.

CONCLUSIONS

1. Literacy in general (and media literacy in particular) is closely related to daily social practices (e.g., active citizenship), mediated learning, education, knowledge construction, application of media literacy skills in daily activities (in social relations, work, and learning), and ability to access information and assess its quality critically. Literacy is very much a social practice the principles of which are imposed on us by our education which is mostly acquired through formal education systems. In a densely mediated environment of knowledge construction, media literacy is considered to be one of the essential and defining elements of literacy. Web 2.0 has transformed the way we access and use information. Therefore, the most radical changes in the understanding of what it means to be literate in the densely-mediated world have been occurring since the onset of the 21st century. Skilfully filtering multimodal information and critically appraising its quality and meaning in any kind of messages and in any type of media is vital. Thus, the convergence of information flows with the new digital media that reach huge numbers of users requires synthesizing competencies from multiple fields. Enabling an individual (a life-long learner) to be a critical user of media and their content is of key importance today because of media effects on knowledge construction, formation of attitudes and, consequently, actions. The review of research literature has revealed that research onto media literacy is rather substantial as regards definitions of the concept in terms of competences but what is lacking is a deeper and more comprehensive coverage of what is subsumed by these competences in particular by taking into consideration all the specific ways by which media users themselves use media in their knowledge construction activities in practice. Thus, the literature overview revealed that approaches to media literacy can be grouped into three groups: (1) definitions and classifications of generalized advisory nature in terms of institutional policies, guidelines and frameworks; (2) approaches to (media) literacy in relation to other relevant literacies that actually investigate the same phenomenon but focus on its particular relevant aspects (for instance, media and information literacy, digital and media literacy, critical media literacy, visual literacy, etc.); and (3) media literacy is an overarching concept that subsumes multiple relevant competencies the need for which is imposed by heavily mediated exposure to reality.

2. The densely mediated knowledge construction in higher education first and foremost implies understanding how higher education and learning are transforming. The research participants are guided by several very *pragmatic* factors that are at work when students search for information and communicate for learning purposes through media that extend the boundaries of formal educational institutions and that bear exceptional significance for learners today or that are used because they are seen as very effective and easily accessible in personal gadgets with the internet connection. The problematic issue is the uncritical use of media for information search and communication without attempting to find out how, for instance, certain search algorithms may limit a learner's vision of the world. The experiences and accounts of the research participants imply that they rarely analyse the nature and the implications of mediated knowledge construction. Thus, decision making regarding appropriateness of information is often based on "thinking with media" but not

"thinking about media" that learners and teachers employ in their knowledge construction. Re-considering the role of an academic library and knowing better the potentials and services that professional academic librarians can offer in higher education results in multiple eye-opening experiences that lead to viewing the ways we build our knowledge about the world anew. One more significant element determining the actual behaviour with multimodal texts and information concerns re-considering what critical thinking and critical appraisal of information indeed imply for the research participants. What has occurred with the concept of *critical thinking* – just like with many other concepts that have come to be seen as very important in contemporary educational context, (for example, *learner autonomy* or *creativity*) – is that critical thinking is customarily pointed out as very important but the specific criteria remain obscure for ordinary users of information and communication media. In short, very pragmatic criteria, such as the availability of time for doing an assignment and / or close proximity of information and communication media define information search, appraisal and selection today.

3. *The Sandglass* theory encompasses two conceptual categories – MORPHING and ANCHORING – that subsume multiple and diverse dimensions of literacy that is broad in terms of its scope (i.e. literacy is seen as essentially related to media literacy skills). The conceptual framework has been developed bearing in mind higher education settings in particular. The MORPHING category implies that media used in knowledge construction considerably impact learners' habits, attitudes, preferences, thinking and strategies of tackling the challenges they face. The symbiotic human-media relationship means that the co-existence of humans and media of communication and information is becoming increasingly more invisible (i.e. individuals are taking them as very natural attributes in almost all social activities they engage in). This has led to an increasing merging of learning (or work) and entertainment activities and the blurred boundaries between them. The ability to multi-task is strengthening because of the strengthening symbiotic human-media relationship. Consequently, this has resulted in the increasing granularity of information we use to build our knowledge. Granularity is visible in the preference for shorter texts and multimodal representation. The complexity of students' coping with their assignments is subsumed by the conceptual category of ANCHORING. This category encompasses both individual and institutional attempts of tackling the challenges they are facing today. Re-thinking educational institution is needed but problematic because of the tensions institutional actors have been experiencing because of the shifts in what is considered as authority (for example, a teacher or an academic librarian has long ceased to be the only authoritative source of knowledge though a teacher has never ceased to be a reliable source of knowledge no matter how limited the mind of a single individual can be in comparison to the immensity of collective intelligence available in the realm of internet). The overreliance on (and the unwitting use of) the most popular search engines, the use of resources building on collective intelligence and collaboration, or the use of social networking sites to share course materials and communicate about study-related issues mean that we have given much of our trust to commercial profit-making companies. Teachers have to assume part of responsibility for how media literate their students are. This responsibility should also be aimed at teaching and learning how to appraise critically fragmentary and multi-

modal information that is used to build knowledge about the world. Critical appraisal and coping in general are very strongly related to the changing perception of time: instead of being seen as linear, time has been depicted as vertical (resembling the top-down flow of information in our screens). The temporal element crosses all dimensions of MORPHING and ANCHORING categories: time management skills (under the pressure of time experienced as passing uncontrollably quickly) play significant role in perceiving the "morphing" reality and "anchoring" in it. Thus the metaphorical representation of the processes related to learning, education, and coping with challenges has been visually depicted as the image of *The Sandglass* encompassing experiential (both mental and physical), temporal, spatial, and cognitive aspects of media literacy in higher education. To conclude with, being media literate in higher education implies at least three components: (i) manifold ability to locate, analyse, assess the quality of and appropriately communicate information; (ii) critical appraisal of information that is much deeper, sophisticated, and reflected than in ordinary daily settings; and (iii) increasing awareness about the nature of media and their role in regard to knowledge construction. This approach contributes (a) to some extent to research onto technology enhanced learning (by substantiating the necessity to foster deeper awareness about technological tools employed in mediated communication and knowledge construction, i.e. not only learning with technologies but also learning about technologies) and (b), more broadly, to research onto media literacy (by crystallising the specific components of what it means to be media literate in higher education as much as the scope of this research has allowed it to do).

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MEDIA LITERACY IN HIGHER EDUCATION

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Bearing in mind current concerns of theorists, practitioners, policy makers, and educationalists regarding media literacy (ML), it is obvious that available classifications and descriptions of ML are very general and can serve as a vantage point for further refining of the concept and its specific factors pertaining to those particular capabilities that an individual needs in a densely mediated world. Though certain documents regarding media literacy assessment criteria and strategies have been available for some years (Celot, 2010; Grizzle et al., 2013; Global Media and Literacy Assessment Framework, 2013), the complexity of the concept, the variety of approaches to it and the increasing mediatisation make it necessary to align the general criteria and strategies with the experiences of individuals as regards the use of the new information and communication media in knowledge construction. Therefore, it is necessary to refine general criteria and strategies by crystallizing those features that emerge from specific individual experiences and bottom-up accounts.

Commonly, media literacy is oriented towards educating high school students about approaches to working with information, while information literacy is oriented towards a wider audience (Grigas et al., 2016, p. 218). However, in the context of life-long learning and the rapidly changing technological and informational environment, it is also vitally important to consider the implications of the necessity to be media literate at all stages of education. What is more, the sources of knowledge construction have shifted, the boundaries between formal and informal learning are becoming blurred, and learning as a phenomenon and process itself has radically transformed with the advent of contemporary media.

Relevance of the thesis. For several years already, researchers have been pointing it out that educationalists have to re-think their attitudes towards media used in knowledge construction, as, for instance, the necessity to distinguish between teaching with media and teaching about media (Gutierrez and Tyner, 2012). The need for a comprehensive research on media literacy in national educational systems and the uptake of media substantiated by systematic research has also been highlighted (Celot, 2010, p. 15). The discourse on media literacy has long centred on classifications or attempts at defining and re-defining the concept. Consequently, some researchers urged to look at the phenomenon anew and to embark on research that would go beyond mere classification and conceptual re-defining (Poster, 2011; Landry, 2017). This urge has also been sparked by the discussions about the balance between technological determinism and the potential of human empowerment. Poster (2011, p. x-xi) points out the difference between mechanical machines that "act on materials like wood and iron" and information machines that "are closer to humans than mechanical machines and establish relations with them that are more profound". The complex and profound relationship between a human being and an information machine has been termed "technogenesis" by Hayles (2012) who has investigated how digital media are changing such human practices as writing, reading, teaching, and learning. "Having the world at one's fingertips" has resulted in such a reality when "the keyboard comes to be seen as an extension of one's thoughts rather than an external device on which one types" (ibid., p. 2-3). Media literacy equips an individual with the competences necessary for human empowerment in search for the balance between dense mediatisation and an informed use of information and communication media. Drawing on Heidegger, Rubavičius (2014,

p. 26-27) calls attention to the human ability to try to know the indefinable and points out the necessity to find a counter-balance for the presumable efficacy and universality of media theories that subject an individual to the logic and power of the information and communication networks and markets. The ubiquity and power of contemporary media have resulted in consumerist thinking that has penetrated almost all spheres of human life. The world of education and research has also undergone transformations impacted by consumerist thinking. Therefore, some of the 20th century and 21st century researchers, media theorists, and philosophers have focused on the problem of the equilibrium between the human agency and the conditions of technologization, consumerism, and mediatisation imposed on human thinking and actions (Baudrillard, 2010; McLuhan, 2003; Poster, 2011; Flusser, 2011; Manovich, 2009).

Under the conditions of densely mediated knowledge construction, it is vitally important to nurture media literacy in contemporary society. The transformations that educational institutions and the process of learning and teaching have been undergoing for some time already (because of the impacts of the new information and communication media) have made it necessary to re-think the co-existential relationship between the human being and media. Educationalists have been particularly concerned about the changes observed in the habits and preferences of learners and our perceptions of what such activities as reading and writing or such processes as knowledge construction indeed imply today. Some researchers believe that the two technologies (in the narrow sense) and information communication media (in the broad sense) that have had an indeed profound and radical impact on the educational system (in terms of teaching methodologies and strategies, knowledge construction by learners, roles of the teacher, knowledge assessment, etc.) throughout the entire history of humanity are the paper book and the internet (Cabero Almenara, 2013).

The impact of media and technologies on education has been one of the most discussed issues in contemporary educational research. The existing strategies and guidelines developed by UNESCO and the European Association for Viewers Interests (EAVI) on the international level are very important (Grizzle et al., 2013; Wilson et al., 2011; Celot, 2010) because they offer a systemic approach to the challenges that education is facing today and a changing attitude towards what it means to be literate nowadays. However, most significant changes in education are given much stronger impetus by the national educational systems. Therefore, it is particularly important for national policy-makers to take into account the implications of the challenges of mediatisation. The State Strategy of Education 2013-2022 (Valstybinė švietimo 2013-2022 metų strategija, 2013) of Lithuania does not take into account the recommendations laid out in the documents of the EAVI and UNESCO regarding media literacy. There are only sporadic references to "reflective, creative, and professional teachers" (ibid., p. 27), "fostering essential competences" (ibid.), "intercultural literacy" (p. 28), supplying schools with contemporary teaching means and information and communication technologies (p. 28), improving knowledge about contemporary technologies (p. 31), "a more diverse spectrum of pedagogical functions" (ibid.), "technological practical skills of knowledge application" (p. 34) that are little specified (for instance, what exactly is meant by "knowledge about contemporary technologies"). Based

on what is stated further on about prioritizing technological practical skills, it is evident that the conception misses one of the essential points made by researchers today: media literacy education goes much further than merely fostering practical (operational) skills of using contemporary media (Hobbs, 2010; 2016). UNESCO in its *Global Media and Information Literacy Framework* (2013) encourages Member States to gather substantiated data "on the status and availability of competencies of MIL" before embarking on the development of national strategies to tackle situational needs and challenges pertaining to the implementation of nationally-tailored MIL policies (p. 17). What is more, as the developers of this document state, promotion and development of MIL competencies results in added value gained through adequate policies and professional standards, mobilized resources, updating training programmes and curricula and, most importantly, empowerment of citizens to be active participants in their societies (p. 23). However, McDougall et al. (2015) see MIL as too broad and too ambitious and suggest a more down-to earth approach to media education and media literacy.

Mediated experience and mediated knowledge construction are of particular importance and relevance in the educational context. Researchers have called attention to the fact that education – as teaching and development of an individual – is rarely an objective of a media creator (M. Pietrass, 2007, p. 10). Pietrass (ibid., p. 10-11) explicates that the world of mediated experience is tremendously important in an adult's life but this world is full of triviality, orientation towards entertainment and profit making and also it cannot be dispensed with in a complex development of the global society. Therefore, Pietrass (ibid.) states that this world must be comprehensively researched. Even more so, educationalists are very much concerned with the learning processes that are occurring in the free time when media are used, i.e. the informal learning that goes on and that is difficult to capture (Pietrass, 2007, p. 10).

Thus the existing research into what it means to be literate today and the very concept of media literacy raise many questions. However, the most essential features for this thesis are derived from the following approaches: (i) "Media literacy helps people to use media intelligently, to discriminate and evaluate media content, to critically dissect media forms, to investigate media effects and uses, and to construct alternative media" (Kellner & Share, 2005, p. 372); (ii) media literacy "is concerned with people's ability to access and process information from any form of transmission" (Potter, 2011, p. 12); and (iii) "[...] the term "digital and media literacy" is used to encompass the full range of cognitive, emotional and social competencies that includes the use of texts, tools and technologies; the skills of critical thinking and analysis; the practice of message composition and creativity; the ability to engage in reflection and ethical thinking; as well as active participation through teamwork and collaboration (Hobbs, 2010, p. 17). Moreover, it is especially important to bring the specific pragmatic aspects that are pointed out by the users of media in educational settings into focus in order to tailor the existing theoretical concepts to the implications of mediated educational reality and knowledge construction. The relevance of this thesis to the existing knowledge about media literacy, therefore, is its key focus on the implications of authentic accounts of those individuals who are directly concerned with the role and impact of mediated knowledge construction in higher education.

The novelty of the thesis. Media literacy has been mostly investigated in the context of education policies and recommendations, media literacy conceptions, criteria, competences of teachers and students (mostly in the secondary education and much less in higher education) (Area and Pessoa, 2012; Banny et al., 2017; Celot, 2010; García-Ruiz et al., 2014; Gutiérrez and Tyner, 2012; Grizzle, 2013; Harshman, 2017; Landry, 2017; Laurillard, 2012; Lee and So, 2014; Marta-Lazo and Grandió Pérez, 2012; McDougall et al., 2015; Nupairoj, 2016; Perry, 2012; Peguerer-Caprino and Martínez-Cerdá, 2016; Ramírez-García and González-Fernández, 2016; Stordy, 2015; Tiede and Graffe, 2014; Valdmane, 2016; Whitworth, 2013) or historical development of the concept (Hobbs, 2016). In Lithuania, important contributions have been done by contemporary authors in various fields related to media studies such as media and communication, media philosophy, media culture (Čiužaitė et al., 2012; Grigas et al., 2016; Keturakis, 2012; Klimašauskas, 2009; Michelkevičė, 2009; Michelkevičius, 2009; Prakapaitė & Paulikaitė, 2017; Obcarskaitė, 2009; Sodeika, 2009; Vidauskytė & Sodeika, 2014) and in the field of educational research (Duoblienė, 2010; Duoblienė, 2011; Vaičiūnienė et al., 2013). Importantly, closely related phenomena such as information literacy in higher education (Vaičiūnienė, 2005; Vačiūnienė, 2007; Vaičiūnienė & Gedvilienė, 2008; Vaičiūnienė & Gedvilienė, 2009; Vaičiūnienė & Gedvilienė, 2011) and issues pertinent to technology enhanced learning (Volungevičienė & Teresevičienė, 2011) have been researched by Lithuanian researchers. However, it is necessary to analyse the phenomenon of media literacy more in-depth and, especially, from the perspective of media users and their bottom-up accounts of how they employ media for their knowledge construction and learning, how they decide on the suitability and quality of media texts and how they reflect upon the role of information and communication media in real-life situations. The importance of qualitative research in media education has been pointed out by Marta-Lazo and Grandío-Pérez (2012). From this particular research perspective, little research has been conducted both globally and in Lithuania. Therefore, this thesis contributes to the existing research on contemporary understanding of literacy that necessarily takes into account media literacy because of the impact of dense mediatisation and technologization on multiple human activities and attitudes. Media literacy has also become a subject of particular concern of policy-makers in Lithuania. It has been observable in the initiatives adopted by the Education Development Centre (Ugdymo plėtotės centras, 2013) of the Ministry of Education and Science of Lithuania (the project "Media and Information Literacy" focused on the development of the awareness about media and information literacy and development of tools for teachers that can be used in the classroom) and public events such as an international conference in the Seimas of the Republic of Lithuania "Societal media literacy: a pre-condition for a secure state" ("Visuomenės medijų raštingumas – saugios valstybės sąlyga", 21 April, 2017). However, what is needed is a continued systematic and comprehensive research both in the international and national contexts. To date, dissertations in educational science have been published about problems partly related to the topic of this thesis in Lithuania (Kasperiūnienė (2017) on the use of social networks and self-regulated learning; Valūnaitė Oleškevičienė (2016) on social media use in university studies). Abroad, doctoral theses about media literacy are written (Baylie, 2017; Gálvez de la Cuesta, 2017; Chen, 2015; Contreras-Pulido, 2014; Kelly, 2015;

Mendoza-Zambrano, 2017; Warnke, 2012) but in Lithuania this thesis is the first doctoral thesis in educational science on media literacy in higher education. What is more, this thesis focuses not so much on media literacy as an outcome of media education but rather as a complex phenomenon that is undergoing continual development. Media literacy is looked at in this thesis from the bottom-up perspective, i.e. by focusing on particular aspects that are raised by students, teachers, educational technologists, and librarians who are directly involved in learning and education-related processes in higher education and who have to apply the skills (that are pointed out in academic literature as relevant to media literacy) in their daily activities in higher education. What is more, higher education itself deserves much more attention that it is given in academic literature in comparison to the amount of research focusing on secondary or primary education (Laurillard, 2002).

The scientific problem, the object and the research questions of the thesis. Due to the impacts of dense mediatisation of knowledge construction, learning and teaching, human behaviour patterns, and ways of knowledge construction have radically changed. Therefore, media literacy has to be sought in order to acquire appropriate competences (knowledge, skills, education, values, and attitudes) for successful self-fulfilment in contemporary society that is often referred to as knowledge society, information society, networked society, media society, etc. Media literacy allows one to search for, select, sort and critically evaluate quality of multimodal information and avoid being overwhelmed, lost, or misinformed amidst uncontrollable information flows under the conditions of information overabundance, information overload or what Whitworth (2009) refers to as "information obesity". A media literate person is also informed about the media he or she employs in knowledge construction above simple operational level. Moreover, it is essential to understand the role of media in a democratic society; therefore, critical thinking skills are very closely related to media literacy skills. Knowledge about the necessity and criteria of critical evaluation of information and students' self-reported ways of using information are inter-related; however, the actual behaviour with texts, used for studies is different, i.e. we are faced here with the **problem** of contradiction between presumed knowing (alongside self-reported use) and students' actual behaviour with multi-modal texts and information as it has been reported by Hogan and Varnhagen (2012). This problem impacts study process and student achievement in higher education. Networked environment, the time students spend online, the new learning preferences of the generation that was born when the internet era was already begun, networking of studies worldwide, the impact of social networks on professional and personal spheres – all these factors entail a number of issues for educationalists, such as changes observed in human thinking and reasoning due to, for example, reading on screen (of fragmented text, hypertext, multimodal formats, etc.) and on paper, changes in students' ability to retain attention, information processing skills, memory capabilities, difficulties in assessing quality of information when faced with information overload, etc. Thus, what is necessary is research grounded in empirical data with a specific focus on the contradiction between knowing about the necessity of the critical appraisal of multimodal information and students' actual behaviour in educational context. Media literacy is usually investigated in the context of secondary education, but it is not that common to research the phenomenon in the context of higher education.

Therefore, media literacy in higher education has been chosen as **the object of this thesis**. The research in this thesis has been guided by the **questions**: (i) *how is media literacy perceived by students, teachers, educational technologists, and librarians in higher education?* (ii) *How do they cope with the challenges of the densely mediated environment of knowledge construction?* (iii) *What particular skills are needed in coping with the challenges of mediated learning, education, and knowledge construction?* And (iv) *Why does the concept of literacy itself needs scientifically-based revisions?*

The aim of the research is to develop a grounded theory of media literacy in higher education in order to account for university students' actual use of multimodal media texts for learning and the related challenges imposed by heavily mediated environment of knowledge construction.

The objectives of the research:
1. To overview research literature pertaining to media literacy in education and knowledge construction in order to reveal the diversity of approaches and the complexity of the concept;
2. To identify the research participants' actual behaviour with and experience of multimodal media texts and information, their decision making regarding quality information selection, ways of coping with information overabundance and digitally mediated knowledge construction; and
3. To develop a grounded theory revealing students' media literacy skills necessary for comprehension and analysis of media texts in higher education.

Research methodology

The research methodology applied in this research is the ***constructivist grounded theory*** (Charmaz, 2014). The choice of ***qualitative*** methodology in this thesis stems from the belief that the defined problem needs an in-depth research in order to understand better and account more precisely how the research participants' attitudes towards the role of media in knowledge construction shape their approaches to coping with their assignments under the conditions of densely mediated environment and information overload. In addition, the ***constructivist*** version is particularly appropriate for studying phenomena of contemporary society: information and communication media employed in daily activities have a very strong impact on learners' knowledge construction, habits, thinking and actions meanwhile media users commonly do not analyse their impact and role deeper and merely use them on a basic operational level. But above all, the constructivist version is based on the distinctive premise that both the researcher and research participants subjectively interpret the reality and co-construct their understandings about a researched phenomenon through their interaction. Data has been collected by conducting ***in-depth, unstructured interviews***. For this thesis, 20 interviews have been conducted and have been instantaneously analysed by applying ***the constant comparative method***. Research participants have been chosen on the basis of ***theoretical sampling*** that implies purposive seeking of those participants who can shed light on the researched phenomenon and its emergent categories, dimensions and their properties. Data have undergone several coding stages – ***initial***

coding, *focused coding*, *axial coding*, and *theoretical coding* – starting with a very close inspection in the initial stage and extending into a theoretical, increasingly more abstract and conceptual processing ultimately leading to the construction of the grounded theory.

Limitations of the research

1. The research limitations arise from the chosen approach to the concept of media literacy in which media literacy is seen as broader in scope than information literacy. Though information literacy is not directly the object of this research, information literacy is nevertheless very closely tied to media literacy because information search is an important issue in this research. A broad perspective always hinders crystallisation of definitions. Therefore, occasionally, the concept of media is used alongside the concept of technologies. Though these are two distinct objects, they cannot be strictly separated because technologies are tools that are inevitably employed in using media. More often than not, the two objects intertwine. **2.** This research is not aimed at classifying, defining or refining the existing lists of particular competences associated with media literacy but rather it is focused on what it means to be media literate from the practical perspectives of media users in higher education. A refined list of media literacy-related competences in higher education could be a research object of another much needed research onto media literacy. **3.** The delimitation of the research object to higher education level only is also a certain limitation to the very scope of the concept of media literacy. **4.** Media literacy raises many problematic questions that have arisen but have not been answered by this research, for instance, who should assume major responsibility for the huge impact of media on knowledge construction (media creators or users or both). This could also be an important research object of another or continued research.

Structure of the thesis

The thesis consists of an introduction, four body parts and discussion, conclusions, bibliography list, and appendices.

In Chapter 1, an initial literature review is done. This review serves as a vantage point that locates the object of this research in the existing conceptual framework. It is very general and does not aim at specifying any particular aspects of the researched object. In line with the premises of grounded theory methodology, comprehensive literature review is delayed until research data has been gathered, analysed and described. Within the constructivist vein, only a broad presentation of key phenomena and general concepts pertinent to research may be introduced in an initial literature review, as it is done in this thesis. Recently, the scope of the conception of literacy has been continuously expanding and the concept getting more complex due to the technological development of society and increasingly more mediated exposure to reality and knowledge construction. As a result, numerous researchers have started constructing their own theories and terminology to label their own perceptions of what it means to be literate nowadays. Bearing in mind the increasingly more extensive academic research, institutional publications, increased interest of educational policy-makers and all those concerned with education, both theorists and practitioners alike, it is obvious that media literacy has to be considered in relation to

particular national contexts and national education systems acknowledging the necessity to integrate media education into teaching curricula. The complexity of the concept and its widening scope mean that many factors come into play in the field. Such being the case, it is necessary to approach the phenomenon and the related processes from both a conceptual perspective (as it is evident in the research and documents discussed in this chapter) and accounts of personal experiences (as it is attempted to do in this thesis).

In Chapter 2, the constructivist grounded theory methodology that has been used in this research is introduced, its basic premises pointed out and its suitability for this particular research explained. In this chapter, data gathering methods, data analysis tools, and data coding stages are described, and information regarding research participants is provided. Besides, this chapter includes sections on the researcher's self-reflection, research ethics principles and research quality criteria.

In Chapter 3, the findings of the empirical research are described. The findings focus on two axial categories. First, the axial category of MORPHING is described in detail; its pertinent dimensions (**symbiosis**, **merging entertainment and learning**, and **granularity**) are explicated through their specific properties. Symbiosis implies the co-existence of the learner (and his or her learning environment termed *locus*) and media through learner-media interaction that can occur in three ways (*modi operandi*). These ways can be spontaneous (natural), controlled to some extent (negotiated) or increasingly more directed (as an individual's level of media literacy rises due to undergoing some media education and increasing awareness about the nature, role and impact of contemporary media on knowledge construction). The dimension of merging entertainment and learning encompasses two properties: (i) *engaging in learning* and (ii) *maintaining attention and overcoming boredom and laziness.* This dimension of granularity has four inherent inter-related properties: (i) *fragmentary building of knowledge*, (ii) *learners' attitudes and practices related with how deep they are ready to dig until primary, original sources*, (iii) *opting for a particular communication mode* (face-to-face or online), and (iv) *opting for a particular reading mode* (screen or paper). Second, the axial category termed ANCHORING is presented alongside its dimensions (**re-thinking educational institution**, **critical appraisal of information**, and **coping**) and their relevant properties. Four aspects are elaborated in relation to the research data on re-thinking educational institution: (i) *re-thinking the role of the teacher*, (ii) *re-thinking learning*, (iii) *the tension existing because of the imposed use of institutional VLEs versus "free-range" SNs*, and (iv) *a shifting locus of knowledge sources.* As regards critical appraisal of information, four aspects are discussed: (i) the reliance on the sole and most popular search engine, *"Gone with the Google default"*, (ii) *the Wikipedia paradox*, (iii) defining *criteria of critical appraisal of information*, and (iv) the need of *re-thinking library and the role of a librarian*. Coping is seen as a process of "*acquiring contours*" amidst the challenges students, teachers, librarians, and educational technologists are facing today (such aspects as (i) pragmatic *opting for simplicity*, (ii) *"getting hold" of time*, and (iii) *setting certain guidelines (or having rules) for coping with assignments*.

In Chapter 4, the constructivist grounded theory developed in this research is explicated. The grounded theory called *The Sandglass* is a metaphorical representation of the process, structure and context of media literacy in higher education today when knowledge

is being built on the confluence of multiplicity of sources via various media and increasing multimodality and granularity of information that a learner is exposed to. Media literacy is seen as an outcome of purposeful and integrative education about the media that are employed in higher education and overall learning processes. In educational context in particular, information selection has to be subject to purposeful and directed critical appraisal of information and source criticism. Any skills developed in higher education are seen as necessarily extending merely operational level: an advanced learner is a media literate person who purposefully seeks to become knowledgeable about media themselves: their impact on his or her thinking, habits and decision-making. *The Sandglass* theory revolves around re-thinking media literacy (and in fact literacy) through the image of a physical object, a sandglass, whose main purpose is measuring the passage of time with the flow of sand through a narrow neck. Time has emerged as a concept that is ever-present in the background: the research participants often referred to the experienced lack of time and emotions such as loss, desperation, tiredness when faced with overabundance of information. This is some contradiction to the euphoria that is enjoyed by technological enthusiasts. Therefore, the innumerable benefits brought by contemporary media into our lives have to be looked upon critically in educational contexts. Education nowadays should be aimed at empowering and enabling individuals to become more immune to the negative impacts of mediatisation in knowledge construction.

In Chapter 5, the structural and conceptual elements of the theory of *The Sandglass* are analysed in the background of the relevant theoretical conceptions found in the scientific literature and the constructed grounded theory is discussed in the context of the existing research pertinent to the research object of this thesis. This chapter is divided into five sections. In *On the meaning of media for a higher education institution and an individual leaner*, insights are drawn from the classical works of Blumer (1969) on the meanings of things for learners that are *central* for them; Dewey's (1934/1980) observations on experience, interaction and environment; McLuhan's (2003) distinction between the linear mind and the mind shaped by electronic technologies. Today, social interaction has long extended the physical boundaries of face-to-face communication. Contemporary media have extended the temporal and spatial boundaries of human presence. Therefore, the relevant implications are discussed in the light of theories and research of Castells, 2005; Crisell (in Rustin, 2016); Ellefsen, 2016; Flusser, 2011; Giroux, 1989; Hayles, 2012; Lombard & Ditton in Campanella Bracken and Skalski, 2010; Pietrass, 2006; Whitworth, 2009 and others). In *On multimodal and increasingly more granular textuality and interpretation in education*, as the multimodal and increasingly more granular textuality is becoming more dominant in the contemporary learning and teaching context, Ricoeur's (2000) theory of interpretation is discussed in the context of the research done for this thesis, especially as regards Ricoeur's approach to a text as an actualised discourse dispersed into various references in the world and Gallagher's (1992) classical work on hermeneutics in education in which he maintains that interpretation and education are essentially connected. In *On the impact of media on learner thinking, habits, and actions in learning*, insights are built on the theory of Baudrillard (2010), and his observations regarding the law of technological inertia and *spectacularisation*; Manovich's theory of the language of new media (2009), his

concept of *externalized thinking* and analysis of features of hypertext and their implications for hypertext readers; Hayles' (2012) concept of *technogenesis* and types of reading (such as close reading, hyper reading, and machine reading). Even more so, the constant presence of mediated reality has resulted in what most recently some researchers (Serrano-Puche, 2016) have pointed out as an emotional relationship between users and their gadgets. Vaidhyanathan (2012) points out the necessity of re-thinking the role of search engines owned by commercial companies in our construction of knowledge about the world. One more relevant issue discussed is that of plagiarising (Brabazon, 2015) and understanding of what it implies today (Kress, 2010). In ***On "the hybrid oral culture" in transforming academic library***, transforming academic library (Brabazon, 2012) is taken into consideration. Contemporary research into the role of library in a densely mediated construction of knowledge assigns new roles to libraries and librarians. Cline (2014), for instance, refers to the new role of academic librarians as *blended librarianship*. Nguyen (2015) distinguishes between two models of contemporary libraries: *Web 2.0 library* and *participatory library*. In ***On coping with information overabundance, critical attitude towards easily available information, transforming knowledge, and the changed concept of literacy***, the issues that have been encompassed by the theory of *The Sandglass* are placed in the context of research carried out by Albergaria-Almeida et al. (2011) who see critical thinking as the core goal of higher education and note that its key indicator is "higher-order questioning" which is related to active learning; Freire's (2000) statement that literacy is much more than mechanical skills (for him, literacy necessarily involves raising critical awareness of learners); fundamental attempts to re-define literacy and update the concept for contemporary contexts by Cope and Kalantzis (2000), Lankshear and Knobel (2011), and others; Kellner and Share's (2005) work on critical media literacy by highlighting such aspects of reading, interpreting, and creating texts that imply the *inherence* of critical approach to texts today; research into the implications of using collectively and collaboratively created and edited resources of online information in formal education (Staub and Hodel, 2016); a widely-spread Hobbs' (2010; 2016) approach to literacy; and research aimed at determining possible scopes of the concept of *literacy* (Lee and So, 2014; Stordy, 2015 and others).

The dissertation ends with Conclusions, the list of References and Appendices.

CONCLUSIONS

1. Media literacy is directly related to major social practices of an individual (active citizenship, responsible creation of social relations, learning), conscious and purposive construction of knowledge, application of media literacy skills in daily activities acquired due to media education, a constant improvement of quality information search skills and a constant critical appraisal of all multimodal information and media that are employed in information search and knowledge construction. In a densely mediated environment of knowledge construction, media literacy is considered to be one of the essential and defining elements of literacy. Web 2.0 has transformed the way we access and use information. Therefore, the most radical changes in the understanding of what it means to be literate in the densely-mediated world have been occurring since the onset of the 21st century. Skil-

fully filtering multimodal information and critically appraising its quality and meaning in any kind of messages and in any type of media is vital. Thus, the convergence of information flows with the new digital media that reach huge numbers of users requires synthesizing competencies from multiple fields. Enabling an individual (a life-long learner) to be a critical user of media and their content is of key importance today because of media effects on knowledge construction, formation of attitudes and, consequently, actions. The review of research literature has revealed that research onto media literacy is rather substantial as regards definitions of the concept but what is lacking is a deeper and more comprehensive coverage of what is subsumed by these competences in particular by taking into consideration all the specific ways by which media users themselves use media in their knowledge construction activities in practice. Thus, the literature overview revealed that approaches to media literacy can be grouped into three groups: (1) definitions and classifications of generalized advisory nature in terms of institutional policies, guidelines and frameworks; (2) approaches to (media) literacy in relation to other relevant literacies that actually investigate the same phenomenon but focus on its particular relevant aspects (for instance, media and information literacy, digital and media literacy, critical media literacy, visual literacy, etc.); and (3) media literacy is an overarching concept that subsumes multiple relevant competencies the need for which is imposed by heavily mediated exposure to reality.

2. The densely mediated knowledge construction in higher education first and foremost implies understanding how higher education and learning are transforming. The research participants are guided by several very *pragmatic* factors that are at work when students search for information and communicate for learning purposes through media that extend the boundaries of formal educational institutions and that bear exceptional significance for learners today or that are used because they are seen as very effective and easily accessible in personal gadgets with the internet connection. The problematic issue is the uncritical use of media for information search and communication without attempting to find out how, for instance, certain search algorithms may limit a learner's vision of the world. The experiences and accounts of the research participants imply that they rarely analyse the nature and the implications of mediated knowledge construction. Thus, decision making regarding appropriateness of information is often based on "thinking with media" but not "thinking about media" that learners and teachers employ in their knowledge construction. Re-considering the role of an academic library and knowing better the potentials and services that professional academic librarians can offer in higher education results in multiple eye-opening experiences that lead to viewing the ways we build our knowledge about the world anew. One more significant element determining the actual behaviour with multimodal texts and information concerns re-considering what critical thinking and critical appraisal of information indeed imply for the research participants. What has occurred with the concept of *critical thinking* – just like with many other concepts that have come to be seen as very important in contemporary educational context, (for example, *learner autonomy* or *creativity*) – is that critical thinking is customarily pointed out as very important but the specific criteria remain obscure for ordinary users of information and communication media. In short, very pragmatic criteria, such as the availability of time for doing an assignment and / or close proximity of information and communication media define information search, appraisal and selection today.

3. *The Sandglass* theory encompasses two conceptual categories – MORPHING and ANCHORING – that subsume multiple and diverse dimensions of literacy that is broad in terms of its scope (i.e. literacy is seen as essentially related to media literacy skills). The conceptual framework has been developed bearing in mind higher education settings in particular. The MORPHING category implies that media used in knowledge construction considerably impact learners' habits, attitudes, preferences, thinking and strategies of tackling the challenges they face. The symbiotic human-media relationship means that the co-existence of humans and media of communication and information is becoming increasingly more invisible (i.e. individuals are taking them as very natural attributes in almost all social activities they engage in). This has led to an increasing merging of learning (or work) and entertainment activities and the blurred boundaries between them. The ability to multi-task is strengthening because of the strengthening symbiotic human-media relationship. Consequently, this has resulted in the increasing granularity of information we use to build our knowledge. Granularity is visible in the preference for shorter texts and multimodal representation. The complexity of students' coping with their assignments and challenges faced by contemporary educational institutions are subsumed by the conceptual category of ANCHORING. Re-thinking educational institution is needed but problematic because of the tensions institutional actors have been experiencing because of the shifts in what is considered as authority (for example, a teacher or an academic librarian has long ceased to be the only authoritative source of knowledge though a teacher has never ceased to be a reliable source of knowledge no matter how limited the mind of a single individual can be in comparison to the immensity of collective intelligence available in the realm of internet). The over-reliance on (and the unwitting use of) the most popular search engines, the use of resources building on collective intelligence and collaboration, or the use of social networking sites to share course materials and communicate about study-related issues mean that we have given much of our trust to commercial profit-making companies. Teachers have to assume part of responsibility for how media literate their students are. This responsibility should also be aimed at teaching and learning how to appraise critically fragmentary and multimodal information that is used to build knowledge about the world. Critical appraisal and coping in general are very strongly related to the changing perception of time: instead of being seen as linear, time has been depicted as vertical (resembling the top-down flow of information in our screens). The temporal element crosses all dimensions of MORPHING and ANCHORING categories: time management skills (under the pressure of time experienced as passing uncontrollably quickly) play significant role in perceiving the "morphing" reality and "anchoring" in it. Thus the metaphorical representation of the processes related to learning, education, and coping with challenges has been visually depicted as the image of *The Sandglass* encompassing experiential (both mental and physical), temporal, spatial, and cognitive aspects of media literacy in higher education. To conclude with, being media literate in higher education implies at least three components: (i) manifold ability to locate, analyse, assess the quality of and appropriately communicate information; (ii) critical appraisal of information that is much deeper, sophisticated, and reflected than in ordinary daily settings; and (iii) increasing awareness about the nature of media and their role in regard to knowledge construction. This ap-

proach contributes (a) to some extent to research onto technology enhanced learning (by substantiating the necessity to foster deeper awareness about technological tools employed in mediated communication and knowledge construction, i.e. not only learning with technologies but also learning about technologies) and (b), more broadly, to research onto media literacy (by crystallising the specific components of what it means to be media literate in higher education as much as the scope of this research has allowed it to do).

APPROBATION OF THE RESEARCH RESULTS

Presentations in conferences:
1. International scientific conference "SOCIAL INNOVATIONS: THEORETICAL AND PRACTICAL INSIGHTS (SOCIN 2014)", MYKOLAS ROMERIS UNIVERSITY", 23-24 October, 2014, Vilnius. Presentation "Conceptualising media literacy in the process of reading digital media texts".
2. International conference "OPEN PROFESSIONAL COOPERATION", Vytautas Magnus University and Lithuanian Association of Distance and e-Learning, 5 November 2015, Kaunas. Presentation "The role of media literacy in higher education: the dynamics of the concept and the actual situation in Lithuania and Spain".
3. International scientific conference "SOCIAL INNOVATIONS: THEORETICAL AND PRACTICAL INSIGHTS (SOCIN' 2016)", Mykolas Romeris University, 29 September, 2016, Vilnius. Presentation "Media and information literacy in university studies: conceptualising academic research in the Googled world".
4. International scientific interdisciplinary conference "DISCOURSE, TECHNOLOGY AND TRANSLATION", Mykolas Romeris University, 12-13 October, 2017, Vilnius. Presentation "Discourse analysis tools and critical appraisal of information in teaching translation".
5. The 1ˢᵗ International conference of doctoral students in Educational Sciences, Klaipėda University, 14 October, 2017. Presentation "Media Literacy in Higher Education: Constructing Knowledge in a Densely Mediated World".

Publications on the dissertation topic:
1. Mažeikienė V., Vaičiūnienė V., Valūnaitė Oleškevičienė G. (2013). *Social Media in Adult Education* (Edited Book), Mykolas Romeris University, Vilnius.
2. Vaičiūnienė, V., Mažeikienė, V. (2014). Kūrybiškumas, įtinklintas mokymas(is) ir visapusiškesnių pažintinių gebėjimų ugdymas universitetinėse studijose. *Socialinių mokslų studijos: mokslo darbai/Societal Studies: research papers, 6*(1), 21-33.
3. Mažeikienė, V. (2015). Critical awareness in the realm of abundance. *European lifelong learning magazine (ELM) (2015(1),* 1. Available at http://www.elmmagazine.eu/articles/critical-awareness-in-the-realm-of-abundance/
4. Vaičiūnienė, V.; Mažeikienė, V. (2016). Media literacy and information literacy: conceptual convergence into a composite notion of MIL. *Socialinių mokslų studijos : mokslo darbai/Societal studies:research papers, 8*(1), 78-94. Available at http://dx.doi.org/10.13165/SMS 16-8-1-5

Methodology seminars:

Methodology seminars for doctoral students in social sciences (13-14 February 2015, University of Latvija, Riga).

Study visits:
1. June-July 2015 Faculty of Education (University of Cordoba)
2. June -July 2016 Faculty of Education (University of Cordoba)

Personal consultations

Prof. Antonia Ramírez García (Faculty of Education, University of Cordoba) and Prof. Pillar Guttiérez Arenas (Faculty of Education, University of Cordoba) 2015-2016

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2001 – now   Mykolas Romeris University, Institute of Humanities. Lecturer. Subjects: English for Specific Purposes (psychology, social work, law and penitentiary activities); Modern English; Translation; Discourse Analysis. Development and publication of teaching materials, development of examination tasks, publication of research papers, application of innovations in teaching, development of interactive and distance teaching materials, development of new study programmes.

1998 – 2000   Lithuanian University of Law, Centre for International Relations and Studies. Management of documentation regarding international cooperation and correspondence, searching international partners, analysing information regarding international cooperation and its dissemination to university's structural units, translation and interpreting.

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Viktorija Mažeikienė

MEDIJŲ RAŠTINGUMAS AUKŠTAJAME MOKSLE

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Mokslo daktaro disertacija ginama Klaipėdos universiteto, Mykolo Romerio universiteto, Vilniaus universiteto, Vytauto Didžiojo universiteto edukologijos mokslo krypties taryboje:

Pirmininkė:
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Daktaro disertacija bus ginama viešame edukologijos mokslo krypties tarybos posėdyje 2018 m. birželio 22 d. 13 val. Mykolo Romerio universitete, L-101 aud. (MRU LAB).
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Daktaro disertacijos santrauka išsiųsta 2018 m. gegužės 22 d.

Daktaro disertaciją galima peržiūrėti Lietuvos Martyno Mažvydo nacionalinėje bibliotekoje bei Klaipėdos universiteto, Mykolo Romerio universiteto, Vilniaus universiteto ir Vytauto Didžiojo universiteto bibliotekose.

Atsižvelgus į šiuolaikinių teoretikų, praktikų, strategijų formuotojų ir edukologų spendžiamus probleminius klausimus medijų raštingumo srityje (MR) yra akivaizdu, kad turimos MR kompetencijų klasifikacijos ir jų aprašai yra pernelyg bendro pobūdžio, tinkami būti tik atspirties tašku siekiant plačiau ir giliau aprašyti MR sąvoką ir specifinius faktorius, kurie apibrėžia ypatingus individų gebėjimus, kurių jiems reikia labai stipriai medijuotame pasaulyje. Nors tam tikri dokumentai, pateikiantys medijų raštingumo vertinimo kriterijus ir strategijas, pasiūlyti jau prieš keletą metų (Celot, 2010; Grizzle ir kt., 2013; *Global Media and Literacy Assessment Framework*, 2013), MR sąvokos kompleksiškumas bei vis gilėjantis medijų poveikis verčia tikslinti bendruosius kriterijus ir strategijas atsižvelgiant ir į besimokančiųjų paaiškinimus, kaip jie savo pačių žodžiais apibūdina patirtį naudojantis informacijos paieškos ir komunikacijos medijomis kuriant žinias. Todėl būtina papildyti bendruosius kriterijus bei strategijas tomis MR savybėmis, kurios išryškėja ištyrus individualias asmenines patirtis ir paaiškinimus.

Įprasta manyti, kad MR orientuotas tik į vidurinės mokyklos moksleivių darbo su informacija įgūdžių ugdymą, nors isties MR sąvoka apima daug platesnę auditoriją (Grigas ir kt., 2016, 218 p.). Tačiau mokymosi visą gyvenimą kontekste, kuomet technologinė ir informacinė aplinka labai greitai kinta, yra labai svarbu atsižvelgti į būtinumą ugdyti MR visuose švietimo lygmenyse. Be to, šiuolaikinės medijos pakeitė žinių šaltinio sampratas, išjudino ribas tarp formalaus ugdymo ir savaiminio mokymosi, o ir pats mokymasis (kaip reiškinys ir procesas) radikaliai transformavosi.

Disertacinio darbo aktualumas. Pastaruosius keletą metų mokslininkai nuolat pabrėžia, kad edukologai turi gerai apmąstyti požiūrį į medijas, kurios pasitelkiamos žinioms konstruoti, pavyzdžiui, būtinybę suprasti skirtumą tarp mokymo naudojantis medijomis ir mokymo apie medijas (Gutierrez ir Tyner, 2012). Pabrėžiamas ir būtinumas išsamiai tirti MR nacionalinėse švietimo sistemose ir medijų naudojimą paremti sistemingais tyrimais (Celot, 2010, 15 p.). MR diskursas ilgą laiką telkėsi ties klasifikacijomis ir bandymais apibrėžti ar koreguoti MR sąvokos apibrėžimus. Todėl ir radosi mokslininkų, kviečiančių pažvelgti į reiškinį naujai ir imtis tyrimų, siekiančių daugiau nei tik suklasifikuoti ar tik konceptualiai koreguoti apibrėžimus (Poster, 2011; Landry, 2017). Prie šio kvietimo prisidėjo ir diskusijos apie balansą tarp technologinio determinizmo ir žmogaus įgalinimo potencialo. Poster (2011, x-xi p. p.) analizuoja skirtumą tarp mechaninių mašinų, kurios „veikia tokias medžiagas kaip medis ar geležis", ir informacinių mašinų, kurios „artimesnės žmogui nei mechaninės ir [kurios] užmezga su juo daug gilesnį ryšį". Hayles (2012) šį sudėtingą ir gilų ryšį tarp žmogiškosios būtybės ir informacinės mašinos pavadino „technogeneze" (angl. *technogenesis*). Hayles (2012) tiria, kaip skaitmeninės medijos keičia tokias žmogaus veiklas kaip rašymas, skaitymas, mokymas ir mokymasis. „Pasaulis pasiekiamas pirštų galiukais" reiškia tokią realybę, kur „klaviatūra suprantama kaip žmogaus minčių tęsinys, o ne išorinis įrenginys skirtas spausdinti" (ibid., 2-3 p. p.). MR suteikia individui kompetencijas, būtinas individo įgalinimui siekiant pusiausvyros tarp labai stipraus medijų poveikio ir sumanaus medijų naudojimo informacijos paieškai ir komunikacijai. Remdamasis Heidegger, Rubavičius (2014, 26-27 p. p.) atkreipia dėmesį į žmogaus gebėjimą pažinti tai, kas nežinoma, ir būtinumą ieškoti balanso tarp tariamo medijų teorijų efektyvumo ir universalumo, kur individas matomas kaip paklūstantis informacinių ir komunikacinių tinklų

ir rinkų logikai. Šiuolaikinių medijų savybė rastis visur ir jų galia privedė prie vartotojiško mąstymo, persmelkusio beveik visas žmogaus gyvenimo sritis. Todėl kai kurie XX a. ir XXI a. mokslininkai, medijų teoretikai ir filosofai susitelkė ties atsvara tarp žmogaus gebėjimo veikti savarankiškai ir technologizavimo, vartotojiškumo ir medijų poveikio žmogaus mąstymui ir veiksmams (Baudrillard, 2010; McLuhan, 2003; Poster, 2011; Flusser, 2011; Manovich, 2009).

Labai stipriai medijuoto žinių kūrimo sąlygomis tampa ypač svarbu ugdyti šiuolaiki-nės visuomenės MR. Transformacijos, kurias jau kuris laikas patiria švietimo institucijos ir mokymo(si) procesas (būtent dėl medijų pasitelkimo informacijai ieškoti ir komunika-cijai) taip pat verčia permąstyti koegzistencinį santykį tarp žmogaus ir medijų. Edukologai dažnai reiškia savo susirūpinimą dėl pokyčių, kuriuos stebi besimokančiųjų įpročiuose bei polinkiuose, ir to, kaip mes suvokiame tai, ką skaitymas ar rašymas ar tokie procesai kaip žinių kūrimas išties reiškia šiandien. Yra mokslininkų, manančių, kad būtent dvi techno-logijos (siaurąja prasme) ir informacijos komunikavimo medijos (plačiąja prasme) – t.y., popierinė knyga ir internetas – padarė patį giliausią ir radikaliausią poveikį švietimo siste-mai (kalbant apie mokymo metodologijas ir strategijas, besimokančiųjų žinių konstravimą, mokytojo / dėstytojo vaidmenį, žinių vertinimą ir t.t.) (Cabero Almenara, 2013).

Medijų ir technologijų poveikis švietimui – vienas problemiškiausių klausimų šiuolai-kiniuose edukologiniuose tyrimuose. Turimi tarptautiniai UNESCO ir Europos žiūrovų asociacijos (EAVI) dokumentai (strategijos ir rekomendacijos) (Grizzle ir kt., 2013; Wil-son ir kt., 2011; Celot, 2010) yra labai svarbūs, kadangi juose pateikiami sistemingi būdai siekiant susidoroti su šiandienos švietimo patiriamomis problemomis ir siekiant pakeisti požiūrį į tai, kas šiandien yra raštingumas. Tačiau didžiausi pokyčiai inicijuojami nacio-nalinių švietimo sistemų lygmenyje. Todėl nacionalinių strategijų formuotojams yra ypač svarbu atsižvelgti į stipriai medijuoto žinių kūrimo keliamas problemas. Lietuvos Valstybi-nėje švietimo 2013-2022 metų strategijoje (2013) nėra atsižvelgta į rekomendacijas dėl MR, pateikiamas EAVI ir UNESCO dokumentuose. Čia galima aptikti tik pavienes užuominas apie reflektuojančius, kūrybingus ir profesionalius mokytojus ir dėstytojus (27 p.), esmi-nių kompetencijų ugdymą (ibid.), tarpkultūrinį raštingumą (28 p.), mokyklų aprūpinimą šiuolaikinėmis mokymo priemonėmis ir IKT (ibid.), didesnį šiuolaikinių technologijų iš-manymą (31 p.), įvairesnį pedagogų funkcijų spektrą (31 p.), technologinių praktinių žinių taikymo įgūdžius (34 p.) – ir visa tai yra menkai detalizuota (pavyzdžiui, ką būtent reiškia didesnis šiuolaikinių technologijų išmanymas).

Sprendžiant iš to, kas toliau teigiama šioje strategijoje apie prioritetu laikomus technolo-gijų naudojimo praktinius įgūdžius, tampa akivaizdu, kad šiame dokumente neatsižvelgia-ma į esminius nūdienos mokslininkų pastebėjimus: MR yra daug daugiau nei vien tik prak-tinių (operacinių) medijų (ne vien tik technologijų) naudojimo įgūdžių ugdymas (Hobbs, 2010; 2016). UNESCO 2013 m. publikuotame dokumente „Globali medijų ir informacinio raštingumo pagrindų programa" (angl. *Global Media and Information Literacy Framework*) raginama šalis nares kaupti kuo daugiau duomenų apie medijų ir informacinio raštingu-mo kompetencijų svarbą ir taikymą praktikoje prieš imantis kurti nacionalines strategijas medijų ir informacinio raštingumo ugdymui (17 p.). Svarbu tai, kad, šio dokumento kū-rėjų teigimu, medijų ir informacinio raštingumo kompetencijų ugdymas įgauna pridėtinę

vertė dėl adekvačių politinių sprendimų, profesinių standartų, sutelktų resursų, atnaujintų mokymo programų ir – kas yra visų svarbiausia – piliečių įgalinimo tapti aktyviais savo visuomenių nariais (23 p.). Tačiau yra mokslininkų (McDougall ir kt., 2015), teigiančių, kad medijų ir informacinio raštingumo sąvoka yra pernelyg plati ir per daug siekianti vienu metu, todėl jie siūlo rinktis siauresnę ir labiau realistišką prieigą, susitelkiant ties švietimu apie medijas ir medijų raštingumo ugdymu.

Žinių apie pasaulį konstravimas ir įvairių tikrovės reiškinių patyrimas tarpininkaujant medijoms yra ypač svarbus klausimas, susijęs su švietimu. Tyrėjai jau seniai atkreipė dėmesį į tai, kad švietimas, suprantamas kaip mokymas ir individo ugdymas, retai kada būna medijų turinio kūrėjų tikslas (Pietrass, 2007, 10 p). Pietrass (ibid.) teigia, kad medijuotos patirties pasaulis suaugusiojo gyvenime yra labai svarbus, bet šis pasaulis kupinas trivialumo, polinkio į pramogas ir pelno siekį, o šių dalykų negalima nepaisyti žvelgiant į tai, koks sudėtingas yra globalios visuomenės vystymasis. Todėl Pietrass (ibid.) teigia, kad šį pasaulį būtina išsamiai tirti, juolab kad edukologams labai rūpi ir tai, kokie mokymosi procesai vyksta individo laisvalaikiu, kuomet medijos naudojamos, t.y. savaiminis mokymasis, kuris vyksta tuo metu, bet kurį labai sunku užčiuopti (ibid., 10 p.).

Taigi, esami raštingumo tyrimai ir pati MR sąvoka kelia daugybę probleminių klausimų. Tačiau šioje disertacijoje pasirinktos kelios mokslinės prieigos, kurios, autorės nuomone, atskleidžia svarbiausius MR aspektus: (i) „Medijų raštingumas padeda žmonėms naudotis medijomis protingai, įžvelgti skirtumus ir vertinti medijų turinį, kritiškai analizuoti įvairias medijų formas, aiškintis medijų poveikį ir naudojimą ir konstruoti alternatyvias medijas" (Kellner ir Share, 2005, 372 p.); (ii) medijų raštingumas „kalba apie žmonių gebėjimą pasiekti ir apdoroti bet kokia perdavimo forma perteikiamą informaciją" (Potter, 2011, 12 p.); ir (iii) "[...] terminas „skaitmeninis ir medijų raštingumas" apima visą spektrą kognityvinių, emocinių ir socialinių kompetencijų ir yra susijęs su tekstų, įrankių ir technologijų naudojimu; kritiško mąstymo ir analizės gebėjimus; informacijos pranešimų kūrimo ir kūrybiškumo praktiką; gebėjimą reflektuoti ir etiškai mąstyti; ir taip pat aktyvų dalyvavimą komandos darbe ir bendradarbiavimą" (Hobbs, 2010, 17 p.). Be to, ypač svarbu išsiaiškinti tuos specifinius pragmatinius aspektus, susijusius su MR, apie kuriuos užsimena medijų naudotojai kalbėdami apie švietimą, kad būtų galima papildyti, pakoreguoti ir patikslinti esamas teorines sampratas iš besimokančiųjų patirties kylančiomis įžvalgomis apie medijų poveikį ir vaidmenį švietime ir žinių konstravime. Todėl šis disertacinis tyrimas siejasi su esamomis mokslo žiniomis apie MR tuo, kad jo dėmesio centre yra autentiški duomenys, pateikti tų tyrimo dalyvių, kurie tiesiogiai susiduria su medijuoto žinių konstravimo aukštajame moksle vaidmeniu ir poveikiu.

Tyrimo naujumas. MR srityje daugiausiai tirtos švietimo strategijos ir rekomendacijos, MR sampratos, kriterijai, mokytojų bei mokinių kompetencijos (aukštasis mokslas tirtas daug mažiau) (Area ir Pessoa, 2012; Banny ir kt., 2017; Celot, 2010; García-Ruiz ir kt., 2014; Gutiérrez ir Tyner, 2012; Grizzle, 2013; Harshman, 2017; Landry, 2017; Laurillard, 2012; Lee ir So, 2014; Marta-Lazo ir Grandío Pérez, 2012; McDougall ir kt., 2015; Nupairoj, 2016; Perry, 2012; Peguerer-Caprino ir Martínez-Cerdá, 2016; Ramírez-García and González-Fernández, 2016; Stordy, 2015; Tiede ir Graffe, 2014; Valdmane, 2016; Whitworth, 2013) arba istorinė MR sąvokos raida (Hobbs, 2016). Lietuvos mokslininkai yra atlikę svarbių

tyrimų įvairiose srityse, susijusiose su medijų studijomis, pvz. medijų ir komunikacijos, medijų filosofijos, medijų kultūros (Čiužaitė ir kt., 2012; Grigas ir kt., 2016; Keturakis, 2012; Klimašauskas, 2009; Michelkevičė, 2009; Michelkevičius, 2009; Prakapaitė ir Paulikaitė, 2017; Obcarskaitė, 2009; Sodeika, 2009; Vidauskytė ir Sodeika, 2014), edukologijos srityje (Duoblienė, 2010; Duoblienė, 2011; Vaičiūnienė ir kt., 2013). Svarbūs ir tyrimai, atlikti MR labai artimose srityse, pvz., informacinio raštingumo aukštajame moksle (Vaičiūnienė, 2005; Vačiūnienė, 2007; Vaičiūnienė ir Gedvilienė, 2008; Vaičiūnienė ir Gedvilienė, 2009; Vaičiūnienė ir Gedvilienė, 2011), ir technologijomis grįsto mokymo(si) srityje (Volungevičienė ir Teresevičienė, 2011). Tačiau būtina tirti būtent MR daug giliau ir ypač atsižvelgiant į medijų naudotojų pateikiamus duomenis apie tai, kai jie naudoja medijas žinioms konstruoti ir mokytis, kaip nusprendžia, ar medijų tekstai yra tinkami ir kokybiški, ir ką jie galvoja apie medijų vaidmenį ieškant informacijos ir ja dalinantis praktinėse situacijose. Apie kokybinių tyrimų svarbą medijų raštingumo ugdymo lauke yra diskutavę Marta-Lazo ir Grandío-Pérez (2012). Žvelgiant būtent iš tokių tyrimų perspektyvos, nėra daug mokslinių tyrimų nei Lietuvoje, nei pasaulyje. Todėl šiuo disertaciniu darbu siekiama prisidėti prie esamų tyrimų apie šiuolaikinę raštingumo sampratą, būtinai įtraukiant į ją ir MR sąvoką dėl poveikio, kurį žmogaus veikloms ir žinioms turi labai skvarbios medijos ir jų persmelkta aplinka. MR yra susilaukęs tam tikro švietimo strategų dėmesio Lietuvoje. Pradinių iniciatyvų yra ėmęsis Ugdymo plėtotės centras įgyvendindamas projektą „Medijų ir informacinis raštingumas", kuriuo siekiama gilinti žinias apie medijų ir informacinį raštingumą ir kurio metu sukurtos mokymo priemonės mokytojams ir mokinių tėvams. Yra įvykę ir svarbių viešų renginių (pvz., 2017 m. balandžio 21 d. LR Seime įvyko tarptautinė konferencija „Visuomenės medijų raštingumas – saugios valstybės sąlyga"). Tačiau tęstinių sistemingų ir išsamių mokslinių tyrimų labai trūksta tiek Lietuvos, tiek pasaulio moksle, bet edukologijos srityje jau yra apgintos kelios daktaro disertacijos, tiriančios kai kurias temas, kurios tam tikrais aspektais siejasi su MR. Kasperiūnienės (2017) disertacijoje tiriami universiteto dėstytojų bei jų studentų savireguliacinio mokymosi socialiniuose internetiniuose tinkluose procesai; Valūnaitės Oleškevičienės (2016) disertacijoje tiriamas socialinių medijų naudojimo universitetinėse studijose fenomenas. Užsienio šalyse yra apgintų disertacijų ir būtent MR srityje (Baylie, 2017; Gálvez de la Cuesta, 2017; Chen, 2015; Contreras-Pulido, 2014; Kelly, 2015; Mendoza-Zambrano, 2017; Warnke, 2012), bet Lietuvoje šis disertacinis tyrimas apie MR aukštajame moksle yra pirmasis edukologijos srities disertacinis darbas apie MR. Svarbu ir tai, kad šiame tyrime tiriamas ne tiek MR kaip vien tik švietimo apie medijas rezultatas, bet kaip kompleksinis reiškinys, kuris nuolat vystosi. Į MR čia siekiama pažvelgti „iš apačios", tyrimo dalyvių akimis, t.y. tiriant tuos aspektus, kuriuos iškelia patys studentai, dėstytojai, edukacinių technologijų specialistai ir bibliotekininkai, kurie visi tiesiogiai įsitraukę į studijų procesus aukštajame moksle ir kurie turi taikyti bent jau kai kuriuos įgūdžius, kurie mokslinėje literatūroje nurodomi kaip susiję su MR, savo kasdienėje veikloje. Be to, pats aukštasis mokslas turi sulaukti didesnio mokslininkų dėmesio, nes jam skirtų mokslinių tyrimų yra daug mažiau nei tyrimų vidurinio ugdymo ar pradinio ugdymo lygmenyse (Laurillard, 2002).

Mokslo problema, objektas ir tyrimo klausimai. Dėl medijų poveikio žinių konstravimui mokymas(sis), žmogaus elgesio modeliai ir žinių konstravimo būdai radikaliai pasikeitė.

Todėl būtina siekti MR. Jis sudaro sąlygas įgyti kompetencijų (žinių, įgūdžių, išsilavinimo, vertybių ir nuostatų), reikalingų sėkmingam savęs realizavimui šiuolaikinėje visuomenėje, kuri dažnai apibūdinama kaip žinių visuomenė, informacijos visuomenė, tinklo visuomenė, medijų visuomenė ir pan. MR suteikia galimybių ieškoti, atsirinkti, rūšiuoti ir kritiškai vertinti daugiaterpės informacijos kokybę ir nesutrikti, nepasimesti ir nebūti suklaidintam nevaldomo informacijos srauto, kuomet informacijos yra per daug – t.y. to, kas mokslininkų įvardijama kaip infomacijos perteklius arba „informacinis nutukimas" (Whitworth, 2009) (angl. *information obesity*). Medijų atžvilgiu raštingas žmogus supranta, kokį poveikį jo žinių kūrimui turi medijos daug giliau nei vien tik operaciniame lygmenyje. Be to, suprasti, kokį vaidmenį medijos atlieka demokratinėje visuomenėje yra gyvybiškai svarbu. Būtent todėl ir kritinio vertinimo gebėjimai yra labai glaudžiai susiję su MR įgūdžiais. Yra ryšys tarp žinojimo, kad būtina kritiškai įvertinti informaciją ir kad yra tam tikri kritiško informacijos vertinimo kriterijai, ir tarp pačių studentų žodžiais apibūdinamų informacijos panaudojimo būdų. Tačiau tikrasis elgesys praktikoje su medijų tekstais, kurie pasitelkiami studijuojant, yra kitoks, t.y., čia mes susiduriame su **problema**, kylančia iš prieštaravimo: nors teigiama (kalbant apie elgesį su tekstais), kad būtina juos kritiškai įvertinti, bet besimokančiųjų praktiniai veiksmai dirbant su daugiaterpiais tekstais ir informacija nėra tas pats, kas jų teigiamas žinojimas, kaip reikia dorotis su informacija (Hogan ir Varnhagen, 2012). Ir šis mokslo požiūriu probleminis prieštaravimas veikia tiek patį studijų procesą, tiek studentų pasiekimus aukštajame moksle. Įtinklinta aplinka, internete studentų praleidžiamas laikas, nauji mokymosi polinkiai tos kartos, kuri gimė jau po interneto eros pradžios, studijų įtinklinimas globaliu mastu, socialinių tinklų poveikis profesinėms ir asmeninėms gyvenimo sritims – visi šie faktoriai edukologams kelia daugybę probleminių klausimų, pavyzdžiui, kokie pokyčiai vyksta žmonių mąstyme ir samprotavime dėl skaitymo ekrane (fragmentiškų tekstų, hiperteksto, daugiaterpių formatų ir pan.) ir tradicinio skaitymo popieriuje, dėl kintančio studentų gebėjimo išlaikyti dėmesį, kaip keičiasi informacijos apdorojimo gebėjimai, gebėjimai įsiminti informaciją, kaip randasi ir sprendžiami sunkumai, su kuriais susiduriama vertinant informacijos kokybę informacinio pertekliaus sąlygomis ir pan. Todėl būtina atlikti tokius tyrimus, kurie remtųsi empiriniais duomenimis ir fokusuotųsi į prieštaravimą tarp teigimo, kad būtina kritiškai vertinti daugiaterpę informaciją, ir studentų tikrojo (praktiškai stebimo) elgesio su informacija švietimo kontekste. MR įprastai tiriamas žvelgiant į viduriniojo ugdymo pakopą, bet jis retai tiriamas aukštojo mokslo lygmenyje. Būtent todėl šio disertacinio darbo **objektu** ir buvo pasirinktas MR aukštajame moksle. Tyrimo metu buvo keliami tokie **klausimai**: (i) *kaip medijų raštingumą aukštajame moksle suvokia studentai, dėstytojai, edukacinių technologijų specialistai ir akademiniai bibliotekininkai?*; (ii) *kaip tyrimo dalyviai susidoroja su problemomis, kylančiomis dėl stipriai medijuotos žinių kūrimo aplinkos?*; (iii) *kokių konkrečių gebėjimų reikia siekiant įveikti patiriamus sunkumus, kuomet mokymas(is), švietimas ir žinių konstravimas yra stipriai medijuoti?*; ir (iv) *kodėl mokslininkams būtina permąstyti ir pačią raštingumo sąvoką?*

Šio disertacinio darbo **tikslas** yra sukurti medijų raštingumo aukštajame moksle grindžiamąją teoriją, kuri paaiškintų kaip studentai iš tiesų naudoja daugiaterpius medijų tekstus studijoms ir kokius sunkumus patiria dėl stipriai medijuotos žinių konstravimo aplinkos.

Tyrimo uždaviniai:

1. Atlikti mokslinės literatūros apie medijų raštingumą švietime ir žinių konstravime apžvalgą, siekiant atskleisti mokslinių prieigų įvairovę ir sąvokos kompleksiškumą;

2. Nustatyti, kaip tyrimo dalyviai iš tiesų praktikoje elgiasi su daugiaterpiais medijų tekstais ir informacija ir kokia yra jų patirtis naudojantis tokiais tekstais ir informacija, kaip jie atsirenka kokybišką informaciją, dorojasi su informacijos pertekliumi ir medijuotu žinių konstravimu;

3. Sukurti medijų raštingumo aukštajame moksle grindžiamąją teoriją, kuri atskleistų, kokie medijų raštingumo gebėjimai yra būtini studentams suvokiant ir analizuojant medijų tekstus studijose.

Tyrimo metodologija

Šiam disertaciniam darbui buvo pasirinkta *konstruktyvistinės grindžiamosios teorijos metodologija* (Charmaz, 2014). *Kokybinės* metodologijos pasirinkimą nulėmė tyrėjos įsitikinimas, kad apibrėžtoji mokslo problema turi būti tiriama daug giliau, kad būtų galima geriau suprasti ir išsamiau paaiškinti sudėtingus ryšius tarp tyrimo dalyvių požiūrių į medijų vaidmenį žinių konstravime ir užduočių atlikimo strategijų stipriai medijuotoje aplinkoje informacijos pertekliaus sąlygomis. Be to, *konstruktyvistinė* versija yra ypač tinkama tiriant šiuolaikinės visuomenės reiškinius: juk kasdienėse veiklose pasitelkiamos informacijos ir komunikacijos medijos stipriai veikia besimokančiųjų žinių konstravimą, įpročius, mąstymą ir veiksmus, o medijų naudotojai įprastai giliau neanalizuoja jų poveikio ir vaidmens ir tenaudoja jas operaciniame lygmenyje. Tačiau svarbiausia yra tai, kad konstruktyvistinė grindžiamosios teorijos versija sukurta remiantis išskirtiniu principu: šioje metodologijoje teigiama, kad tyrėjas ir tyrimo dalyviai subjektyviai interpretuodami tikrovės reiškinius drauge, per tyrimo metu vykstančią jų interakciją, konstruoja tiriamo reiškinio supratimą. Duomenys šiam tyrimui buvo rinkti atliekant *giluminius nestruktūruotus interviu*. Iš viso atlikti 20 interviu, kurių metu gauti duomenys buvo analizuojami taikant *nuolatinio lyginimo metodą*. Tyrimo dalyviai buvo pasirenkami remiantis *teorinės atrankos* metodu, pagal kurį tyrimo dalyviai buvo parenkami tikslingai, renkantis tuos interviu dalyvius, kurie galėjo suteikti vertingų įžvalgų apie tiriamą reiškinį ir palaipsniui ryškėjančias kategorijas, jų dimensijas ir savybes. Duomenys apdoroti per kelias kodavimo stadijas – *pirminį kodavimą, fokusuotą kodavimą, ašinį kodavimą ir teorinį kodavimą* – pradedant nuo labai atidaus žvilgsnio į kiekvieną duomenų segmentą (eilutę) pradinėje stadijoje ir baigiant teorizuota, didėjančios abstrakcijos ir gilėjančio konceptualumo duomenų apdorojimo stadija, kuri tyrimo pabaigoje leido sukurti grindžiamąją teoriją apie tiriamą reiškinį.

Tyrimo ribotumai

1. Pirmiausia tyrimo ribotumai kyla dėl pasirinktos MR koncepcijos, kur MR apibrėžiamas kaip platesnė sąvoka nei informacinis raštingumas. Bet informacinis raštingumas, nors ir nėra tiesioginis tyrimo objektas šiame darbe, išlieka svarbus, nes jis glaudžiai susijęs su MR, o informacijos paieška yra svarbus probleminis klausimas šiame disertaciniame darbe. Platus traktavimas visuomet apsunkina sąvokų definicijų išgryninimą.

Todėl kartais šalia medijų sąvokos minima ir technologijų sąvoka. Nors tai yra du atskiri tyrimo objektai, bet jų negalima griežtai atskirti, jie persipina, nes technologijos yra įrankiai, kurie neišvengiamai pasitelkiami naudojant medijas. **2**. Šiuo tyrimu nesiekiama klasifikuoti, apibrėžti ar tikslinti literatūroje aptinkamus konkrečių kompetencijų, siejamų su MR, sąrašus. Detalios MR kompetencijos, reikalingos aukštajame moksle, galėtų būti kito labai reikalingo tyrimo objektas. **3**. Tyrimo objekto fokusavimas tik į aukštąjį mokslą taip pat yra tam tikras ribotumas turint omenyje MR sąvokos aprėptį. **4**. MR kelia daugybę probleminių klausimų, kurie kilo, bet nebuvo atsakyti šiuo tyrimu (pavyzdžiui, kas turėtų prisiimti atsakomybę už didelį medijų poveikį žinių konstravimui – medijų kūrėjai ar naudotojai, o gal visi). Tai irgi galėtų būti atsakyta nauju arba tęstiniu tyrimu.

Darbo struktūra

Disertaciją sudaro įvadas, keturi pagrindinės dalies skyriai ir diskusijos dalis (penktasis skyrius), išvados, bibliografinis sąrašas ir priedai.

1 skyriuje pateikta pirminė mokslinės literatūros apžvalga. Šia apžvalga siekiama preliminariai apibrėžti tyrimo objektą esamos mokslinės literatūros konceptualiuose rėmuose. Ji yra labai apibendrinto pobūdžio ir ja nesiekiama nustatyti jokių specifinių tiriamo reiškinio savybių. Remiantis grindžiamosios teorijos metodologija, išsami literatūros apžvalga atidedama kol surenkami, išanalizuojami ir aprašomi tyrimo duomenys. Bet pagal konstruktyvistinės grindžiamosios teorijos metodologiją galima atlikti priminę literatūros apžvalgą, kur tik pristatomi svarbiausi reiškiniai ir bendrosios sąvokos, susijusios su tyrimu, kaip ir padaryta šiame darbe. Pastaraisiais metais raštingumo sąvokos aprėptis nuolat plėtėsi, o pati sąvoka tapo kompleksiška dėl technologinio visuomenės vystymosi ir vis stipresnės tikrovės ir žinių apie tikrovę konstravimo mediatizacijos. Todėl ir radosi nemažai mokslininkų, siekiančių pasiūlyti teorinius paaiškinimus ir savą terminologiją, kad galėtų paaiškinti, kaip jie supranta tai, ką raštingumas ėmė reikšti mūsų dienomis. Turint omenyje gausėjančius raštingumo srities mokslinius tyrimus, institucines publikacijas, švietimo strategų ir švietimo teoretikų bei praktikų didėjantį dėmesį, tampa akivaizdu, kad būtina tirti medijų raštingumą nacionalinių švietimo sistemų kontekste ir atsižvelgti į būtinybę kaip nors integruoti švietimą apie medijas į mokymo ir studijų programas. Sąvokos kompleksiškumas ir didėjanti aprėptis tik įrodo, kad raštingumą veikia daugybė faktorių. Esant tokiai situacijai būtina nuodugniai tirti raštingumo reiškinį ir su juo susijusius procesus tiek iš konceptualių perspektyvų (kaip tai daroma mokslo darbuose ir dokumentuose, kurie minimi šiame skyriuje), tiek ir atsižvelgiant į individualias besimokančiųjų patirtis ir požiūrius (kaip bandoma padaryti šiame disertaciniame darbe).

2 skyriuje aprašoma šiame tyrime taikyta konstruktyvistinė grindžiamosios teorijos metodologija, jos pagrindiniai principai ir tinkamumas šiam disertaciniam tyrimui. 2 skyriuje aprašomi ir taikyti duomenų rinkimo metodai, duomenų analizės įrankiai ir duomenų kodavimo fazės. Be to, pateikiama reikalinga išsami informacija apie tyrimo dalyvius. Šiame skyriuje pateikta ir tyrėjos savirefleksija, aprašyti tyrimo etikos principai ir tyrimo kokybės užtikrinimo kriterijai.

3 skyriuje pateikti empirinio tyrimo rezultatai. Rezultatai aprašomi remiantis dviem ašinėmis kategorijomis. Pirma detalizuojama ašinės kategorijos pavadintos VIRSMU

(angl. MORPHING) specifika: atskleidžiamos trys jos dimensijos (**simbiozė**, **pramogų ir mokymosi susiliejimas** ir **informacijos fragmentiškumas (granuliuotumas)**), kurios eksplikuojamos detaliai aprašant jų specifines savybes. Simbiozė – tai koegzistencinis ryšys tarp studento (bei jo mokymosi aplinkos, įvardintos lotynišku žodžiu *locus*) ir medijų, kuris užsimezga dėl studento ir medijų interakcijos, kuri gali vykti keliais būdais (lot. *modi operandi*). Tie būdai gali būti trys: spontaniškas (natūralus), šiek tiek studento kontroliuojamas (primenantis derėjimąsi) ir vis labiau individo valdomas (kuomet kyla besimokančio individo medijų raštingumo lygis, nes individas yra ugdomas arba ugdosi medijų švietimo klausimais ir dėl to jo sąmoningumas ir žinojimas apie šiuolaikinių medijų prigimtį, vaidmenį ir poveikį žinių konstravimui gerėja. Pramogų ir mokymosi susiliejimo dimensija skleidžiasi per dvi jos savybes: (i) *į(si)traukimą į mokymąsi* ir (ii) *dėmesio išlaikymą ir nuobodulio bei tingėjimo pergalėjimą*. Granuliuotumo dimensijai būdingos keturios tarpusavyje susijusios savybės: (i) *fragmentiškas žinių kūrimas*, (ii) *besimokančiojo požiūris ir veiksmai, susiję su pastangomis kuo giliau įsitraukti į priminių, originalių šaltinių paieškas*, (iii) *tam tikro komunikavimo būdo pageidavimas* (fizinėje aplinkoje arba internetu) ir (iv) *tam tikro skaitymo būdo pageidavimas* (ekrane arba popieriuje). Antroji ašinė kategorija pavadinta ĮSITVIRTINIMU (angl. ANCHORING), o jos išskirtos dimensijos yra **švietimo institucijos vaidmens permąstymas**, **kritiškas informacijos įvertinimas** ir **dorojimasis su sunkumais**, kurios irgi detalizuotos aprašant jų būdingąsias savybes. Kalbant apie švietimo institucijos vaidmens permąstymą, aprašomi keturi aspektai, išryškėję kaip svarbūs iš tyrimo duomenų: (i) *dėstytojo vaidmens permąstymas*, (ii) *mokymosi permąstymas*, (iii) *įtampos patyrimas dėl institucinio reikalavimo naudoti formalią virtualaus mokymosi aplinką ir polinkio leistis informacijos ieškotis ir komunikuoti neformaliuose socialiniuose tinkluose* ir (iv) *žinių šaltinio sampratos kaita*. Kritiškas informacijos įvertinimas aptariamas keturių aspektų kontekste: (i) pasitikėjimas vienu ir pačiu populiariausiu paieškos varikliu, „*Google nublokšti*", (ii) *Vikipedijos naudojimo paradoksas*, (iii) *kritiško informacijos įvertinimo kai kurių kriterijų išskyrimas* ir (iv) *būtinumas permąstyti akademinės bibliotekos ir bibliotekininko vaidmenį*. Dorojimasis su sunkumais yra procesas, kuris apibūdintas kaip „kontūrų įgavimas" studentų, dėstytojų, bibliotekininkų ir edukacinių technologijų specialistų patiriamų iššūkių verpete. Ši dimensija apima tokius aspektus kaip (i) pragmatiškas *paprastumo siekis*, (ii) *laiko suvaldymas* ir (iii) *tam tikrų gairių nustatymas (ar taisyklių turėjimas) dorojantis su studijų užduotimis*.

4 skyriuje aprašoma šiame tyrime sukurta grindžiamoji teorija pavadinimu „**Smėlio laikrodis**". Šis pavadinimas metaforiškai perteikia MR aukštajame moksle procesą, struktūrą ir kontekstą. Smėlio laikrodžio metafora nurodo į tai, kaip šiandien yra kuriamos studento žinios: informacija suteka iš įvairių šaltinių, per įvairias medijas, o besimokantysis nuolat susiduria su vis didėjančiu informacijos daugiaterpiškumu ir fragmentiškumu. MR yra laikomas tikslingo ir integralaus švietimo apie medijas, kurios pasitelkiamos aukštajame moksle ir bendrai visame mokymosi procese, rezultatu. Ypač švietimo kontekste būtina informacijos atranką susieti su tikslingu ir sąmoningai atliekamu kritišku informacijos ir šaltinių vertinimu. Šioje teorijoje teigiama, kad bet kokie aukštajame moksle ugdomi gebėjimai privalo apimti daug daugiau nei vien tik operacinius medijų naudojimo gebėjimus: pažengęs vartotojas yra pasiekęs pakankamo MR, nes jis tikslingai siekia kuo daugiau su-

žinoti apie pačias medijas, ne tik jomis perteikiamą informaciją: jų poveikį žmogaus mąstymui, įpročiams ir sprendimams. **„Smėlio laikrodžio"** teorija siekia permąstyti, ką reiškia MR (ir raštingumas apskritai) pasitelkiant fizinio objekto – smėlio laikrodžio – įvaizdį; šio objekto pagrindinė paskirtis – matuoti laiko tėkmę pasitelkiant smėlio tėkmės reguliavimą smėliui tekant siauru kakleliu. Laikas išryškėjo kaip viena tų sąvokų, kuri nuolat slypėjo už visų pokalbių temų: tyrimo dalyviai dažnai užsimindavo apie jų patiriamą laiko trūkumą ir tokias emocijas kaip pasimetimas, desperacija, nuovargis susidūrus su informacijos pertekliumi. Tai yra tam tikras prieštaravimas technologijų entuziastų reiškiamai euforijai. Tai yra ir dar viena iš priežasčių, kodėl į daugybę privalumų, kuriuos šiuolaikinės medijos suteikė žmonėms, reikia žvelgti gana kritiškai švietimo kontekste. Šiandien švietimas turėtų siekti įgalinti ir stiprinti besimokančiųjų imunitetą neigiamam mediatizacijos poveikiui konstruojant žinias.

Penktame, mokslinės diskusijos, skyriuje **„Smėlio laikrodžio"** teorijos struktūriniai ir konceptualieji elementai yra analizuojami esamos mokslinės literatūros teorinių koncepcijų kontekste ir aptariami palyginant juos su šiuolaikiniais moksliniais tyrimais MR srityje. Šis skyrius sudarytas iš penkių dalių. Dalyje pavadinimu **„Ką medijos reiškia aukštojo mokslo institucijai ir besimokančiam individui"** pasitelkiamos įžvalgos iš klasikinio Blumer (1969) darbo apie besimokančiajam svarbių dalykų *centrinę* reikšmę, Dewey (1980) pastebėjimus apie patirtį, interakciją ir aplinką; McLuhan (2003) pabrėžtą skirtumą tarp linijinio proto ir elektroninių technologijų suformuoto proto. Mūsų dienomis socialinė interakcija jau gerokai peržengusi fizines nemedijuotos komunikacijos ribas. Šiuolaikinės medijos praplėtė žmogiškosios egzistencijos laiko ir erdvės ribas. Todėl šio tyrimo rezultatai aptariami ir Castells (2005), Crisell (cit. Rustin, 2016), Ellefsen (2016), Flusser (2011), Giroux (1989), Hayles (2012), Lombard ir Ditton (cit. Campanella Bracken ir Skalski (2010), Pietrass (2006), Whitworth (2009) ir kitų darbų kontekste. Poskyryje **„Daugiaterpis ir vis labiau fragmentiškas tekstualumas ir interpretacija švietime"**, atsižvelgiant į tai, kad tekstų daugiaterpiškumas ir fragmentiškumas vis labiau dominuoja nūdienos mokymosi kontekste, pasitelkiama Riceour (2000) interpretacijos teorija, kuri yra aptariama šio disertacinio tyrimo kontekste, ypač kalbant apie Ricoeur teksto traktavimą, kur tekstas suvokiamas kaip aktualizuotas diskursas išsisklaidęs į įvairias nuorodas pasaulyje. Šiame poskyryje aptariamas ir Gallagher (1992) fundamentalus darbas apie hermeneutiką ugdyme, kur teigiama, kad interpretacija ir ugdymas yra esmingai susiję. Poskyryje **„Medijų poveikis besimokančiojo mąstymui, įpročiams ir veiksmams"** tyrimo įžvalgos aptariamos pasitelkiant Baudrillard (2010) teoriją, ypač kalbant apie jo pastebėjimus dėl technologinės inercijos dėsnio ir reginio kūrimo (*spectacularisation*); Manovich (2009) naujųjų medijų kalbos teoriją ir jo *eksternalizuoto mąstymo* sąvoką bei hiperteksto savybių analizę ir hiperteksto poveikį jo skaitytojui; Hayles (2012) technogenezės (*technogenesis*) koncepciją ir skaitymo tipų klasifikaciją (atidusis skaitymas, hiperteksto skaitymas ir mašininis skaitymas). Be to, nuolatinio buvimo šalia medijuotos tikrovės pasekmė yra ir tai, ką pastaruoju metu tyrėjai (Serrano-Puche, 2016) įvardija kaip susiformavusį emocinį ryšį tarp įrenginių ir jų naudotojų. Vaidhyanathan (2012) pabrėžia būtinybę apmąstyti informacijos paieškos variklių, priklausančių komercinėms įmonėms, vaidmenį mūsų žinių apie pasaulį konstravime. Dar vienas svarbus aspektas yra plagijavimo problema ir plagijavimo suvoki-

mas (Brabazon, 2015). Apie pakitusį plagijavimo suvokimą kalba ir Kress (2010). Poskyryje **„Apie „hibridinę žodinę kultūrą" ir akademinės bibliotekos transformaciją"** svarstoma, kaip keičiasi šiuolaikinė akademinė biblioteka (Brabazon, 2012). Šiuolaikiniai tyrimai apie bibliotekos vaidmenį stipriai medijuotoje žinių konstravimo aplinkoje reiškia, kad bibliotekos ir bibliotekininkai turi keistis. Pavyzdžiui, Cline (2014) pasikeitusią akademinės bibliotekos paskirtį įvardija terminu „mišrioji bibliotekininkystė" (*blended librarianship*). Nguyen (2015) kalba apie du šiuolaikinės bibliotekos modelius: Antrosios kartos saityno biblioteką (*Web 2.0 library*) ir dalyvaujančiąją biblioteką (*participatory library*). Poskyryje **„Dorojimasis su informacijos pertekliumi, kritiškas požiūris į lengvai prieinamą informaciją, besikeičiančios žinios ir pakitusi raštingumo samprata" „Smėlio laikrodžio"** teorijos keliami klausimai aptariami panašių tyrimų kontekste. Albergaria Almeida ir kt. (2011) kritišką mąstymą laiko esminiu aukštojo mokslo tikslu ir pastebi, kad kritiško mąstymo aukštajame moksle skiriamasis indikatorius yra „aukštesnio laipsnio klausinėjimas" (*higher-order questioning*) glaudžiai susijęs su aktyviuoju mokymusi. Pasitelkiami ir tokie klasikiniai darbai kaip Freire (2000) koncepcija, kad raštingumas reiškia daug daugiau nei tik mechaninius įgūdžius, raštingumas būtinai reiškia ir kritišką besimokančiųjų sąmoningumą; didelę reikšmę turintys tyrimai, kuriais siekiama naujai apibrėžti raštingumo sąvoką, kad ji tiktų nūdienos kontekstui (Cope ir Kalantzis, 2000; Lankshear ir Knobel, 2011 ir kt.); Kellner ir Share (2005) kritiškojo medijų raštingumo koncepcija, kur pabrėžiami tokie aspektai kaip tekstų skaitymas, interpretavimas ir kūrimas, kur kritiškas požiūris į bet kokį tekstą laikomas neatsiejamu elementu; kolektyviai ir bendradarbiaujant kuriamų ir redaguojamų internetinių šaltinių naudojimo aukštajame moksle reikšmė (Staub ir Hodel, 2016); plačiai paplitusi šiuolaikinė Hobbs (2010; 2016) raštingumo koncepcija ir tyrimai, kuriais siekiama aprašyti *raštingumo* sąvokos galimas aprėptis (taip pat Lee ir So, 2014; Stordy, 2015 ir kt.).

Disertacijos pabaigoje pateikiamos išvados, bibliografinis sąrašas ir priedai.

IŠVADOS

1. Medijų raštingumas tiesiogiai susijęs su svarbiomis socialinėmis individo praktikomis (pvz., aktyviu pilietiškumu, atsakingu socialinių santykių kūrimu, mokymusi), sąmoningu ir tikslingu žinių konstravimu, medijų raštingumo įgūdžių taikymu kasdienėje veikloje, nuolatos tobulinamu gebėjimu rasti kokybiškos informacijos ir nuolatos kritiškai vertinti visą daugiaterpę informaciją ir pačias medijas, pasitelkiamas informacijos paieškai ir žinių konstravimui. Stipriai medijuotoje žinių konstravimo aplinkoje medijų raštingumas yra laikomas vienu iš esminių ir lemiamų raštingumo elementų. Antrosios kartos saitynas transformavo informacijos prieigos ir naudojimo būdus. Būtent dėl stipriai medijuotos aplinkos radikaliausi raštingumo sąvokos pokyčiai vyko nuo XXI a. pradžios. Tapo būtina gebėti įgudusiai filtruoti daugiaterpę informaciją ir kritiškai įvertinti jos kokybę bei bet kokio formato žinučių, perteikiamų per bet kokio tipo mediją, reikšmę. Taigi, informacijos srautų susiliejimas su naujosiomis skaitmeninėmis medijomis, kurios prieinamos daugybei vartotojų, atnešė būtinybę sintetinti įvairių sričių kompetencijas. Šiandien yra labai svarbu įgalinti individą (besimokantį visą gyvenimą) tapti kritišku medijų ir jomis pertei-

kiamo turinio naudotoju. Šiame darbe atlikta mokslinės literatūros analizė atskleidė, kad tyrimų apie medijų raštingumą pakanka tik kalbant apie sąvokos apibrėžtį, bet labai trūksta gilesnių ir išsamesnių tyrimų apie tai, ką būtent reiškia viena ar kita kompetencija, ypač turint omenyje tai, kaip medijų naudotojai pasitelkia medijas konstruodami žinias praktinėse situacijose. Atlikta literatūros analizė leidžia daryti išvadą, kad šiandieninės teorinės prieigos prie medijų raštingumo fenomeno gali būti apibendrintos į tris grupes: (1) bendro patariamojo pobūdžio aprašai, apibrėžimai ir klasifikacijos institucinių strategijų, gairių ir programų lygmenyje; (2) medijų raštingumo susiejimas su kitais raštingumo tipais, minimais mokslininkų, siekiant išryškinti papildomus MR aspektus ir jų sąsajas (pavyzdžiui, medijų ir informacinis raštingumas, skaitmeninis ir medijų raštingumas, kritiškas medijų raštingumas, vizualinis raštingumas ir kt.); (3) toks medijų raštingumo traktavimas, kur medijų raštingumas laikomas skėtine sąvoka, apimančia daug įvairių kompetencijų, kurių reikia dėl didelio medijų poveikio žinių apie pasaulį konstravimui.

2. Stipriai medijuotas žinių konstravimas aukštajame moksle pirmiausia reiškia būtinybę suvokti, kaip keičiasi aukštasis mokslas ir mokymasis. Tyrimo dalyviai teigė besivadovaują keliais *pragmatiškais* faktoriais, kurie veikia jiems ieškant informacijos ir pasitelkiant medijas komunikacijai mokymosi tikslais. Šios medijos veikia ir už formalios švietimo institucijos ribų ir šiuolaikiniam besimokančiajam jos ypač svarbios. Jos pasitelkiamos ir todėl, kad laikomos labai efektyviomis ir informacija jose labai lengvai prieinama šalia turint įrenginį su interneto ryšiu. Bet problema yra tokia, kad medijos informacijai ieškoti ir komunikuoti yra naudojamos nekritiškai, nebandant geriau suvokti kaip, pavyzdžiui, paieškų algoritmai gali apriboti besimokančiojo pasaulio matymą. Šio tyrimo dalyvių patirtys ir pasakojimai rodo, kad žmonės retai analizuoja, kuo ypatingas medijuotas žinių konstravimas ir kokios gali būti jo pasekmės. Kitaip sakant, apie informacijos tinkamumą dažnai sprendžiama remiantis prielaida, kad medijos tik padeda, bet neanalizuojamos pačios medijas ir tai, kaip jos už mus suformuoja pasaulio vaizdą ir mums jį pateikia. Tyrimo metu paaiškėjo, kad suvokti, kaip konstruojamos mūsų žinios apie pasaulį, gali padėti naujai pažintas arba kitaip pamatytas akademinės bibliotekos vaidmuo ir profesionalių akademinių bibliotekininkų potencialo ir teikiamų paslaugų įvertinimas. Dar vienas labai svarbus veiksnys lemiantis elgesį su daugiaterpiais tekstais ir informacija praktinėse situacijose yra susijęs su tyrimo dalyvių geresniu suvokimu to, kas gi ši tiesų yra kritiškas mąstymas ir kritiškas informacijos įvertinimas. *Kritiško mąstymo* sąvoka (kaip ir daug kitų sąvokų, kurios laikomos labai svarbiomis šiuolaikinio švietimo kontekste, pavyzdžiui, *besimokančiojo autonomija* ar *kūrybiškumas*) nuolat minima kaip viena svarbiausių, bet jos specifiniai kriterijai informacijos ir komunikacijos medijų vartotojams kasdienėse veiklose lieka labai migloti. Trumpai tariant, tyrimas parodė, kad informacijos paiešką, vertinimą ir atranką lemia labai pragmatiški kriterijai: laiko užduočiai atlikti limitas ir / arba medijų, pasitelkiamų informacijai pasiekti ir komunikuoti, nuolatinis artimas buvimas šalia individo.

3. „**Smėlio laikrodžio**" teorija remiasi dviem konceptualiom kategorijom – VIRSMU ir ĮSITVIRTINIMU – kurios skleidžiasi per daugelį įvairių raštingumo, labai plačios aprėpties sąvokos, dimensijų (t.y. raštingumas mūsų dienomis yra esmingai susijęs su medijų raštingumo gebėjimais). Šis teorinis aprašymas sukurtas ypač galvojant apie aukštąjį mokslą. VIRSMO kategorija kalba apie tai, kad žinių konstravime pasitelkiamos medijos

iš esmės veikia besimokančiojo įpročius, požiūrius, polinkius, mąstymą ir dorojimosi su sunkumais strategijas. Simbiotinis ryšys tarp žmogaus ir medijų reiškia tai, kad žmogus ir informacijos bei komunikacijos medijos koegzistuoja tokiu būdu, kad medijų veikimas tampa vis mažiau pastebimas (t.y. individas medijas priima kaip labai natūralius savo aplinkos elementus beveik visose socialinėse veiklose, į kurias jis įsitraukia). Dėl to atsitiko taip, kad mokymosi (ir darbinės) veiklos susiliejo su laisvalaikio veiklomis, ribos tarp šių dviejų sričių tapo neryškios. Gebėjimas vienu metu atlikti daug užduočių irgi stiprėja, nes stiprėja simbiotinis ryšys tarp žmogaus ir medijų. Be to, informacija, kurią naudojame savo žinioms kurti, dėl medijų poveikio tapo labai fragmentuota (granuliuota). Konceptualioji ĮSITVIRTINIMO kategorija apima kompleksinius studentų dorojimosi su užduotimis aspektus ir švietimo institucijos pastangas tam tikrais būdais spręsti jų patiriamus probleminius reiškinius. Būtina permąstyti, kas šiandien yra švietimo institucija, bet tai yra sudėtinga, kadangi švietimo institucijų atstovai patiria daug virsmų, susijusių su kintančia autoriteto samprata (pavyzdžiui, dėstytojai ir akademiniai bibliotekininkai jau seniai nebėra vieninteliai autoritetingi žinių šaltiniai, nors dėstytojas visuomet buvo ir yra patikimas žinių šaltinis, nesvarbu koks ribotas gali atrodyti pavienio individo protas palyginus su kolektyvinio intelekto internete milžiniška aprėptimi). Pernelyg didelis pasitikėjimas (ir nekritiškas naudojimasis) populiariausiais interneto paieškos varikliais, kolektyvinio intelekto ir bendradarbiavimo resursų naudojimas ar socialinių tinklų pasitelkimas dalintis mokymo medžiaga ir komunikuoti studijų klausimais reiškia, kad mes suteikėme daug pasitikėjimo komercinėms pelno siekiančioms įmonėms. Dėstytojai privalo prisiimti dalį atsakomybės už savo studentų medijų raštingumą. Ši atsakomybė turėtų būti nukreipta į siekį mokyti, kaip kritiškai vertinti fragmentišką daugiaterpę informaciją, kuria remiantis kuriamos besimokančiųjų žinios apie pasaulį. Kritiškas informacijos vertinimas ir dorojimasis su problemomis yra labai stipriai susiję ir su besikeičiančiu laiko pajautimu ir suvokimu: „Smėlio laikrodžio" schemoje laikas vizualizuojamas ne kaip linijinis, bet vertikalus (primenantis vertikalų informacijos pateikimą ir tėkmę mūsų ekranuose). Laiko elementas kerta visas VIRSMO ir ĮSITVIRTINIMO kategorijas: laiko valdymo įgūdžiai (kuomet nuolat patiriamas laiko trūkumas arba nevaldomai greitas jo ėjimas) atlieka svarbų vaidmenį suvokiant tikrovės virsmą ir įsitvirtinimą joje. **„Smėlio laikrodis"** metaforiškai vaizduoja mokymosi, švietimo ir dorojimosi su sunkumais procesus, atsižvelgiant į patyriminius (tiek psichinius, tiek fizinius), laiko, erdvės ir kognityvinius medijų raštingumo aukštajame moksle aspektus. Tad medijų raštingumas aukštajame moksle apima bent tris komponentus: (i) daugialypį gebėjimą rasti, analizuoti, vertinti informacijos kokybę ir ją tinkamai komunikuoti; (ii) kritišką informacijos vertinimą, kuris yra daug gilesnis, sumanesnis ir detalesnis bei apmąstytas negu kasdienėse veiklose; ir (iii) gilėjantį medijų prigimties ir vaidmens žinių konstravime pažinimą. Šiame disertaciniame darbe išvystyta prieiga iš dalies prisideda prie technologijomis grįsto mokymosi tyrimų (nes pagrindžia būtinumą gilinti technologinių įrankių, naudojamų medijuotoje komunikacijoje ir žinių kūrime, t.y. ne tik mokytis naudojantis technologijomis, bet ir jas pačias geriau pažinti) ir taip pat, platesne prasme, prie medijų raštingumo tyrimų, t.y. medijų raštingumo aukštajame moksle, tiek, kiek tą leido padaryti šio tyrimo parametrai.

TYRIMO REZULTATŲ APROBAVIMAS

***Konferencijose skaityti pranešimai*:**
1. Tarptautinė mokslinė konferencija "SOCIAL INNOVATIONS: THEORETICAL AND PRACTICAL INSIGHTS (SOCIN 2014)", MYKOLAS ROMERIS UNIVERSITY", 2014 m. spalio 23-24 d. d., Vilnius. Pranešimas „Conceptualising media literacy in the process of reading digital media texts".
2. Tarptautinė konferencija "OPEN PROFESSIONAL COOPERATION", Vytauto Didžiojo universitetas ir Lietuvos nuotolinio ir e. mokymosi (LieDM) asociacija, 2015 m. lapkričio 5 d. Kaunas. Pranešimas "The role of media literacy in higher education: the dynamics of the concept and the actual situation in Lithuania and Spain".
3. Tarptautinė mokslinė konferencija "SOCIAL INNOVATIONS: THEORETICAL AND PRACTICAL INSIGHTS (SOCIN' 2016)", Mykolo Romerio universitetas, 2016 m. rugsėjo 29 d., Vilnius. Pranešimas "Media and information literacy in university studies: conceptualising academic research in the Googled world".
4. Tarptautinė mokslinė tarpdisciplininė konferencija "DISKURSAS, TECHNOLOGIJOS IR VERTIMAS", Mykolo Romerio universitetas, 2017 m. spalio 12-13 d.d., Vilnius. Pranešimas "Discourse analysis tools and critical appraisal of information in teaching translation".
5. Pirmoji tarptautinė edukologijos doktorantų konferencija, Klaipėdos universitetas, 2017 m. spalio 14 d., Klaipėda. Pranešimas "Media Literacy in Higher Education: Constructing Knowledge in a Densely Mediated World".

***Publikacijos disertacijos tema*:**
1. Mažeikienė V., Vaičiūnienė V., Valūnaitė Oleškevičienė G. (2013). *Social Media in Adult Education* (Edited Book), Mykolo Romerio univeristetas, Vilnius.
2. Vaičiūnienė, V., Mažeikienė, V. (2014). Kūrybiškumas, įtinklintas mokymas(is) ir visapusiškesnių pažintinių gebėjimų ugdymas universitetinėse studijose. *Socialinių mokslų studijos: mokslo darbai/Societal Studies: research papers, 6*(1), 21-33.
3. Mažeikienė, V. (2015). Critical awareness in the realm of abundance. *European lifelong learning magazine (ELM) (2015(1)*, 1. Prieiga per http://www.elmmagazine.eu/articles/critical-awareness-in-the-realm-of-abundance/
4. Vaičiūnienė, V.; Mažeikienė, V. (2016). Media literacy and information literacy: conceptual convergence into a composite notion of MIL. *Socialinių mokslų studijos: mokslo darbai/Societal studies: research papers, 8*(1), 78-94. Available at http://dx.doi.org/10.13165/SMS 16-8-1-5

***Metodologijos seminarai*:**
Metodologijos seminarai socialinių mokslų doktorantams 2015 m. vasario 13-14 d. d., Latvijos universitetas, Ryga.

1. 2015 m. birželis-liepa Edukologijos fakultetas, Kordobos universitetas (Ispanijos Karalystė)
2. 2016 m. birželis-liepa Edukologijos fakultetas, Kordobos universitetas (Ispanijos Karalystė)

Asmeninės konsultacijos:

Prof. Antonia Ramírez García (Edukologijos fakultetas, Kordobos universitetas) ir prof. Pillar Guttiérez Arenas (Edukologijos fakultetas, Kordobos universitetas) (2015-2016)

INFORMACIJA APIE AUTORĘ

1.	**Vardas, pavardė**	VIKTORIJA MAŽEIKIENĖ	
2.	**El. paštas**	viktorija.mazeikiene@gmail.com	
3.	**Išsilavinimas**		
	Mykolo Romerio universitetas	Edukologijos doktorantūros studijos	2012 – 2018
	Vilniaus universitetas	Anglų kalbotyros magistro laipsnis	1998 – 2000
	Vilniaus universitetas	Anglų filologijos bakalauro laipsnis	1994 – 1998
4.	**Darbo patirtis**		
	2001 – dabar	Mykolo Romerio universitetas, Humanitarinių mokslų institutas. Lektorė. Dėstomi dalykai: Profesinė anglų kalba (psichologija, socialinis darbas, teisė ir penitencinė veikla); Šiuolaikinė anglų kalba; Vertimo praktikumas; Diskurso analizė. Mokymo metodinių priemonių, programų, egzaminų užduočių, mokslinių straipsnių rengimas ir publikavimas, inovatyvių mokymo priemonių rengimas ir taikymas mokant anglų kalbos, interaktyvios profesinės anglų kalbos mokymo medžiagos rengimas, mokomosios medžiagos rengimas nuotolinėms studijoms, dalyvavimas kuriant naujas mokymo programas.	
	1998 – 2000	Lietuvos teisės universitetas, Tarptautinių ryšių ir studijų centras. Informacijos apie universiteto tarptautinį bendradarbiavimą tvarkymas ir susirašinėjimas su tarptautiniais universiteto partneriais, tarptautinių universiteto partnerių paieška, informacijos apie tarptautinį bendradarbiavimą analizė ir teikimas universiteto struktūriniams padaliniams, vertimas raštu ir žodžiu.	
5.	**Mokslinių interesų sritys**	Suaugusiųjų mokymas(is), profesinės anglų kalbos dėstymo metodika, vertimo problemos, medijų raštingumas, diskurso analizė.	

APPENDICES

APPENDIX 1.
List of research participants

	PC	Sex	Age	C	LC	DY	SP / PA
1	P1ET	M	39	LT	LT	00:35:23 (2013)	Administrator and educational technologist
2	P2F	F F F	50 46 32	LT LT LT	LT LT LT	00:56:01 (2013)	University teaching (philology and applied linguistics)
3	P3S	M	20	LT	LT	00:30:03 (2014)	English for specific purposes
4	P4S	F	23	LT, UK	LT	00:24:55 (2014)	British literature; Translation and editing
5	P5T	M	37	LT	LT	00:45:53 (2014)	University teaching (law, e-space and informatics)
6	P6S	F	19	LT	LT	01:01:19 (2014)	Psychology
7	P7S	M	19	LT	LT	00:30:47 (2014)	Psychology
8	P8S	F	19	LT	LT	00:58:41 (2014)	Psychology
9	P9S	F	20	LT	LT	01:09:51 (2014)	English for specific purposes
10	P10S	F	22	LT, ES	LT	00:39:83 (2014)	Translation and editing
11	P11.1S	F	21	LT	LT	00:17:02 (2015)	English for specific purposes; Law
12	P12L	F	38	LT	LT	01:16:45 (2015)	Librarian, thematic
13	P13L	M	32	LT	LT	01:03:34 (2015)	Librarian, thematic
14	P14L	F	41	LT	LT	01:09:12 (2015)	Librarian, lecturer, previously administrator in a distance learning unit
15	P11.2S	F	21	LT	LT	01:16:07 (2015)	English for specific purposes; Law
16	P16T	M	30	LT	LT	01:11:36 (2015)	University teaching (technologies)
17	P17T	F	43	ES	ES	01:05:06 (2016)	University teaching (educational technologies) and administrative position
18	P18S	F	23	ES, UK	EN	00:33:07 (2016)	Education
19	P19T	F	45	ES	ES	00:30:32 (2016)	University teaching (education) and administrative position
20	P23M	F	40	LT	LT	00:55:21 (2016)	Public servant, Head of Department, Ministry of Education and Science of the Republic of Lithuania

PC participant code; C country; LC language of communication;
DY Duration and year of interview; SP / PA study programme/professional activity

Medžiagos paieška

Kaip pradedate ieškoti informacijos gavę iš dėstytojo užduotį?

Kodėl jūsų naudojama paieškos sistema jums atrodo tinkamiausia?

Bibliotekininkų pagalba? Dėstytojų? Bendramokslių?

Kada nutraukiate paieškas?

Internetas

Ką manote apie internetą kaip informacijos mokymui(si) šaltinį?

Informacija

Kokia informacija jums yra kokybiška / patikima?

Kokios rūšies informacija – interneto puslapiai, filmai, radijo laidos, TV laidos, tradicinės popierinės knygos, meno kūriniai ir pan. – jums atrodo naudingiausia, suprantamiausia?

Kas jums yra internetas / kinas / radijas / televizija / fotografija / menas / knyga / biblioteka?

Koks informacijos pateikimo formatas, pvz. vaizdas, garsas, tik tekstas, hipertekstas, daugiaterpis tekstas – jums labiausiai patinka?

Elektroniniai ir spausdintiniai tekstai: skaitymas, rašymas, teksto suvokimas

Kokių tekstų skaitote daugiau? Kokius tekstus jums lengviau skaityti?

Koks yra skaitymas ekrane ir popieriuje atspausdinto teksto?

Palyginkite tradicinio linijinio teksto skaitymo procesą ir internetinių puslapių tekstų skaitymą.

Ar skaitote vienu metu keliuose languose atidarytus tekstus?

Kuo skiriasi rašymas popieriuje ir klaviatūra?

Informacijos šaltinių gausa ir prieinamumas

Kas jums padeda susiorientuoti informacijos srautuose?

Kaip atsirenkate tinkamą medžiagą?

Kaip jaučiatės susidūrę su nuolat didėjančiais informacijos kiekiais?

Kaip skaitote tekstus, jeigu reikia perskaityti daug?

Kokių žinių ir gebėjimų reikia studentui?

Kuo galėtų padėti dėstytojai, bibliotekos darbuotojai?

Muchas gracias por encontrar tiempo para esta entrevista. Antes de empezar, quiero ase-gurarte que toda su información será utilizada exclusivamente para mi investigación. Voy a asignar un código a esta entrevista para dejar tu nombre en el anonimato. Y otra cosa que necesito preguntarte es si puedo grabar esta entrevista para transcripción y siguiente análisis de datos.

1. ¿Qué habilidades necesitan los estudiantes de universidad en la era de Internet, las redes sociales, la sobrecarga de información, y ubicuidad de tecnologías?

2. ¿Cuál es el nivel del pensamiento crítico de los estudiantes (del primer año) sobre (i) tecnologías, (ii) información en internet, (iii) medios de comunicación?

3. ¿Qué competencia y cualidades necesita un profesor / una profesora de universidad en nuestra era de tecnologías?

4. En Lituania todos los estudiantes con quien yo hablaba han dicho que casi todo se puede encontrar en Google? ¿Qué es tan atractivo en Google? ¿Qué les falta a los otros buscadores?

5. ¿Qué te parece – pueden los recursos abiertos y las universidades abiertas sustituir a lo que es tradicional?

6. ¿Cuáles son las ventajas o desventajas de un clase virtual / aprendizaje a distancia – en la plataforma Moodle, por ejemplo -- en comparación con lo tradicional?

A print out of a text initially coded line-by-line (interview code *dogui 001*)

13 Atmestinai žiūrėti į savo darbą, kadangi mes manome (.) kadangi mes manome, jog informacija bus

        -> (1359-104): approaching assignment carelessly

        -> (1359-104): finding info quickly and simply

14 surandama greitai ir paprastai. Ji retai yra patikrinama, ta prasme, dažnai studentas kalba autoriaus vardu.

        -> (1464-115): presenting internet info as your own

        -> (1464-115): rarely checking internet info

15 Ir ji yra retai patikrinama. Taip pat šaltiniai kaip Vikipedija, anot vienu dėstytoju, (.) ta prasme,

        -> (1580-400): describing Wikipedia as 'potluck dinner'

16 ne anot vienu, bet vieniems dėstytojams ji yra patikima, neutrali, jie neatkreipia demesio į šaltinių

17 medžiagą, o kiti kategoriški ir draudžia vartoti Vikipediją, kadangi ji yra (.) jeigu taip galėčiau išsireikšti

18 "suneštinė". Informacija "suneštinė" ir bet kas ją gali paredaguoti ir panašiai.

        -> (1580-400): differing viewpoints of teachers

        -> (1580-400): regarding Wikipedia controversially

19 IR: O apie lietuvišką ar anglišką Vikipediją kalbi?

        -> (1980-62): $do not count

            -> (1980-62): $IR

20 IE: Aš kalbu apie lietuvišką Vikipediją. Angliška, prancūziška ir galbūt mums, dalykinės kalbos

        -> (2056-249): failing to check Wikipedia info

        -> (2056-249): lacking linguistic competence

21 studentams, ieškant informacijos prancūzų kalba, galbūt kartais sunku patikrinti tą informacijos patikimumą,

22 (.) mums trūksta kompetencijos.

23 IR: Kalbinės?

        -> (2313-23): $do not count

            -> (2313-23): $IR

24 IE: Taip, kalbinės. Arba, tarkim, istorinės kompetencijos. Ir panašiai.

        -> (2348-67): lacking various competences to check info

        -> (2348-67): linguistic, historical competence

25 IR: Na bet, pavyzdžiui, pasižiurėti, kas autorius yra?

        -> (2418-292): $do not count

              -> (2418-292): $IR

26 IE: Patikrini, tarkim, kas autorius yra,iš kur jis...

27 ... Eh (.) dažniausiai, jei ruošiuosi temai, kuri yra labai abstrakti, tarkim, (.) aplinka, eh (.) aplinkosauga

        -> (2710-439): distinguishing un-authored facts

        -> (2710-439): leading students to present info as if it were their own

29 ir panašiai, autorius dažnai nėra svarbus, kadangi tai yra abstrakti tema ir tiesiog pateikiami tam tikri

30 faktai, kurie nereikalauja tos... ta prasme citavimo ar panašiai.

	Categories of focused coding (most telling initial codes or focused codes subsuming several initial codes)	Dimension COPING
P4S mostar	001-114 searching in Google being easier and simple+ 001-156 watching videos: a simple way of comprehending topics+ 001-231 unfocused reading for killing time	Acquiring contours: opting for simplicity, getting hold of time, setting guidelines / having rules (practical aspect of COPING)
P6S uguzusien	001-230 accounting for not reading: laziness?	
P7S linsiaul	001-49 using a textbook if knowing info is indeed there+	
P11S uguzup	002-45 choosing articles easy to understand+	
P16T makalin	001-140 problems stemming from inability to manage info+ 001-146 *boiling in the same stew, imagining you know the truth+* 001-166 defining internet users as very inert+ 001-204 enjoying use of Google Scholar+ 001-318 wanted objective: passed examination 001-346 quitting when overwhelmed by too much work, *interesting vs not interesting+*	Re-thinking literacy (theoretical aspect of COPING)
P19T antorg	002-99 setting strict requirements for one's students regarding choice of publications+ 002-200 Moodle requiring effort, space, time+	
P12L irlaz	001-100 discarding library catalogue as complexity+ 001-67 postponing hard work	
P14L marpo	001-76 spontaneously occurring Google symbiosis+ 001-84 opting for simplicity: commonly human feature+ 001-101 scratching the surface+ 001-130 preferring digested material to original sources+ 001-139 enjoying simplicity at the cost of perfection+ 001-154 narrowing enclosure+ 001-159 experiencing the effect of horse blinkers+ 001-160 the necessity for fundamentals, quest for happiness <u>CHAPTER 4 GT</u> 001-189 misconceiving difficulty of philosophical texts+ 001-193 experiencing the effect of horse blinkers+ 001-215 dealing with fragmentation 001-276 easing student work by providing slides+	
P3S robmerkel	001-36 attempting to control hyperlinks+ 001-89 skimming web texts for important info+ 001-94 following the logic of essay composition+ 001-100 relying on intuition in selecting info+	
P4S mostar	001-139 feeling desperate when confronting info amount+ 001-180 Moodle use by learner depending on teacher strategy 001-216 coping with publishing amounts by choosing classics	
P5T0malau	001-99 introducing new students to academic info search 001-183 lacking basic academic search skills 001-207 *all blindfolded by Google products* 001-280 teachers honing their info search skills+ 001-367 *drawing a line* in info selection+ 001-373 choosing what to read depending on availability of time+ 001-375 *you can't embrace it all, just can't+* 001-455 *it is what you let them know* 001-496 setting guidelines from very beginning 001-508 valuing Moodle for its tool set	

File: antorg 002.atx
Code "pre-conceiving students' abilities"
Line: 120
THE 'DIGITAL NATIVE' DEFAULT
9 December 2016, Vilnius
The 'digital native' default implies our pre-conception that the young generation possesses an inborn propensity for technologies and media and they are inborn skillful users. The concepts of 'digital natives' and 'digital immigrants' have spread rapidly and have been assumed unquestioningly. Despite some random criticism, they are still vibrant and still surface from time to time in academic discourse. They are particularly liked by teachers for at least one reason: this assumed divide justifies teachers feelings of insecurity due to the unquestioned assumption that the young generation – inertly – come from technologized world just as like the older generation comes from the long-gone (and often longed for) world of pre-technologization as we understand it today. The uncritical accepting of the supposed divide and the spreading of the concepts has caused considerable problems in education: if you unwittingly pre-conceive that your students are skillful users of technologies and media because they were born with them, you start from the wrong point. By way of comparison, it is like teaching the alphabet from D pre-conceiving that your students are somehow naturally born with A, B, and C. Following this track, we end up with students at the tertiary level of education whose information searching ways are delimited to the unwitting, uncritical, impulsive, never-questioned, but deep-ingrained 'GOOGLE DEFAULT'.

File: pilargut 001.atx
Date: June 15, 2016, Córdoba
NOTES OF THE INTERVIEW (CONT.)
4. long-term distance communication with a student gradually DISTORTS the communicated message. Pilar remembered her own experience with one of her students. They had been engaged in distance communication consulting about an assignment (a paper) that was being prepared by the student for some time when Pilar started noticing that their communication started going astray in a sense: though they communicated a lot, she could not convey fully and in-depth all she wanted to convey. Some elements remained uncommunicated, some misunderstanding started interfering. Consequently, the two had to meet face-to-face to RESTORE the once lost track, to FILL IN the missing elements of the teacher-communicated message, and even TO CORRECT errors that arose due to, as Pilar believes, the gradual distorting of her communicated info due to distance.
5. the problem of time resources: with 70 students, a teacher can hardly spend that much time relaying the intended content to all via distance instruction. This aspect has been discussed by P2F as well. Cf. "El uso de las redes sociales en la creación de una narrativa: aprendizajes en Internet" Alfredo Alvarez Alvarez (Antonijos pdf knyga 2 straipsnis): En este trabajo se presenta el estudio realizado en torno a un ejercicio de ficción vehiculado a través de una narrativa transmedia, en el cual se plantea el problema de la verosimilitud en la información que se transmite a través de Internet. Dado que el usuario se encuentra frente a una herramienta de la que, con mucha frecuencia, desconoce sus posibilidades verdaderas de difusión.

File: sarcord 001.atx
Code "editing easier on paper"
Line: 114
LIT. FOR DISCUSSION
see the chapter on AUTOMATION in Manovich p. 102 on how an individual is at least partially restrained from participation in the process of creation.

Dėl medijų poveikio žinių konstravimui mokymas(si), žmogaus elgesio modeliai ir žinių konstravimo būdai radikaliai pasikeitė. Medijų raštingumas suteikia galimybių ieškoti, atsirinkti, rūšiuoti ir kritiškai vertinti daugiaterpės informacijos kokybę ir nesutrikti, nepasimesti ir nebūti suklaidintam nevaldomo informacijos srauto, kuomet informacijos yra per daug – t.y. to, kas mokslininkų įvardijama kaip infomacijos perteklius. Šio disertacinio darbo tikslas yra sukurti medijų raštingumo aukštajame moksle grindžiamąją teoriją, kuri paaiškintų, kaip studentai naudoja daugiaterpius medijų tekstus studijoms ir kokius sunkumus patiria dėl stipriai medijuotos žinių konstravimo aplinkos. Šiam disertaciniam darbui buvo pasirinkta konstruktyvistinės grindžiamosios teorijos metodologija. Tyrimo rezultatai leidžia daryti išvadą, kad medijų raštingumas tiesiogiai susijęs su svarbiomis socialinėmis individo praktikomis (pvz., aktyviu pilietiškumu, atsakingu socialinių santykių kūrimu, mokymusi), sąmoningu ir tikslingu žinių konstravimu, medijų raštingumo įgūdžių taikymu kasdienėje veikloje, nuolatos tobulinamu gebėjimu rasti kokybiškos informacijos ir nuolatos kritiškai vertinti visą daugiaterpę informaciją ir pačias medijas, pasitelkiamas informacijos paieškai ir žinių konstravimui. „Smėlio laikrodžio" teorija remiasi dviem konceptualiom kategorijom – virsmu ir įsitvirtinimu – kurios skleidžiasi per daugelį įvairių raštingumo, labai plačios aprėpties sąvokos, dimensijų (t.y. raštingumas mūsų dienomis yra esmingai susijęs su medijų raštingumo gebėjimais). Šis teorinis aprašymas sukurtas ypač galvojant apie aukštąjį mokslą.

Due to the impacts of dense mediatisation of knowledge construction, learning and teaching, human behaviour patterns and ways of knowledge construction have radically changed. Media literacy allows one to search for, select, sort and critically evaluate quality of multimodal information and avoid being overwhelmed, lost, or misinformed amidst uncontrollable information flows under the conditions of information overabundance and information overload. The aim of the thesis is to construct a grounded theory of media literacy in higher education in order to account for university students' actual use of multimodal media texts for learning and the related challenges imposed by heavily mediated environment of knowledge construction. The research methodology applied in this research is the constructivist grounded theory. The research results indicate that media literacy is directly related to major social practices of an individual (active citizenship, responsible creation of social relations, learning), conscious and purposive construction of knowledge, application of media literacy skills in daily activities acquired due to media education, a constant improvement of quality information search skills and a constant critical appraisal of all multimodal information and media that are employed in information search and knowledge construction. The Sandglass theory encompasses two conceptual categories – morphing and anchoring – that subsume multiple and diverse dimensions of literacy that is broad in terms of its scope (i.e. literacy is seen as essentially related to media literacy skills). The conceptual framework has been developed bearing in mind higher education settings in particular.