LITHUANIAN SPORTS UNIVERSITY

Dovilė Selickaitė

DEVELOPING PHYSICAL EDUCATION TEACHERS' SELF-EFFICACY FOR CREATING INCLUSIVE EDUCATION ENVIRONMENT

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Scientific supervisor

Assoc. Prof. Dr. Diana RĖKLAITIENĖ Lithuanian Sports University (Social Sciences, Education – 07S)

Scientific advisors:

Prof. Dr. Habil. Kazimieras PUKĖNAS Lithuanian Sports University (Technology Sciences, Electrical and Electronics Engineering – 01T)

Prof. Dr. Yeshayahu HUTZLER Academic College at Wingate Institute (Behavioral Sciences)

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PADĖKA

Nuoširdžiai dėkoju Jums, kurie žengėte drauge šiuo prasmingu, iššūkių kupinu mokslo keliu. Kiekvieno iš Jūsų skirto laiko, pasidalintų žinių ir suteiktos paramos dėka šis darbas taps atspirtimi tiems, kurie sieks plėtoti mokslinius tyrimus, susijusius su įtraukiu ugdymu Lietuvoje.

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GLOSSARY

Self-efficacy refers to an individual's conviction (or confidence) about his or her abilities to mobilize the motivation, cognitive resources, and courses of action needed to successfully execute a specific task within a given context (Bandura, 1977; 1986)

Attitude is defined as individual's positive or negative feeling associated with performing a specific behavior (Ajzen, 1991).

Special educational needs are defined as the need for help and service in the process of education arising from exceptional personality abilities, congenital or acquired disorders, adverse environmental factors (Parliament of the Republic of Lithuania, 1991).

Inclusive education is a process that takes into account the social, cultural and educational diversity and is based on factors that identify and eliminate obstacles to learning and participation in education (UNESCO, 2001).

Adapted physical education is a diverse program of developmental activities, exercises, games, rhythms, and sports designed to meet the unique physical education needs of individuals (Winnick & Porretta, 2017).

Inclusive learning environment is an education institution, class or other learning-related environment, in which persons of different abilities study in the same place and there are purposefully organized physical, social, and informative sets of circumstances, in which favourable conditions for people with different abilities are created in order to form and implement their experience: knowledge, skills, and attitudes towards themselves and the surrounding world (Rozenfelde, 2016)

LIST OF ABBREVIATIONS

ADHD	_	attention-deficit/hyperactivity disorder
APE	_	adapted physical education
ASD	_	autism spectrum disorder
BEH	_	behavior
CAIPE-LT	-	Lithuanian version of the Children's Attitudes Towards Integrated Physical Education – Rivised
CAIPE-R	-	Children's Attitudes Towards Integrated Physical Education – Rivised
CFA	_	Confirmatory Factor Analysis
CFI	_	comparative fit index
EASIE	_	European Agency Statistics on Inclusive Education
EFA	_	Exploratory Factor Analysis
F	_	Fisher criterion
f^2	_	Cohen's of effect size
g	_	Hedges' effect size
ID	_	intellectual disability
KMO	_	Kaiser-Meyer-Olkin index
М	_	average
ME	_	mastery experience
Ν	_	number
NFI	_	normal fit index
р	_	value of statistical significance
PCA	_	principal component analysis
РСН	_	perceived challenges
PD	_	physical disability
PE	_	physical education
PESEISD-A	_	Physical Educators' Self-Efficacy towards Including Students with Disabilities – Autism
PESEISD- A-LT	-	Lithuanian version of Physical Educators' Self-Efficacy towards Including Students with Disabilities – Autism
PI	_	peers' instructing
PS	_	physiological states
PSD	_	paralympic school days
r	_	correlation coefficient
\mathbb{R}^2	_	coefficient of determination

RMSEA	_	root mean square error of approximation
S	_	safety
SA	_	specific adaptation
SD	_	standard deviation
SE	_	self-efficacy
SEM	_	Structural Equation Modelling
SEN	_	special education needs
SE-PETE-D	_	Self-Efficacy Scale for Physical Education Teacher Education Majors towards Children with Disabilities
SE-PETE- D-LT	_	Lithuanian version of Self-Efficacy Scale for Physical Education Teacher Education Majors towards Children with Disabilities
SP	_	social persuasion
ST	_	staying on task
UNESCO	_	United Nations Educational, Scientific and Cultural Organization
VE	_	vicarious experience
VI	_	visual impairment
x^2	_	chi square
α	_	Cronbach's alpha coeficient
η^2	_	Eta-squared; measure of effect size

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INTRODUCTION

Relevance of the research. Inclusive education is a process that takes into account the social, cultural and educational diversity and is based on factors that identify and eliminate obstacles to learning and participation in education (UNESCO, 2001). According to the position of the European Agency for the Development of Special Needs and Inclusive Education (2017), the key to the inclusive education systems is to ensure that students with special education needs of all ages get meaningful and high quality education together with the same-age peers in the local community. International documents¹ encompass attitudes for students with special educational needs, an inclusive education system geared towards ensuring the provision of adequate education at all levels and support in order to facilitate their effective education. The United Nations Convention on the Rights of Persons with Disabilities (The United Nations, 2006) and the Strategic Objectives for the Implementation of Justice in Education in the Council of Europe up to the year 2020 encourage the introduction of inclusive education policies in all countries (Council of Europe, 2009). Another important process that is gaining its increasing prominence as a result of the development of inclusion is deinstitutionalization. Deinstitutionalisation of children with SEN in the context of inclusion is understood as a reduction in the number of segregated-type institutions and students in them. In line with the provisions of the model of social education for the disabled, established in the United Nations Convention for the rights of people with disabilities (2006) alongside with the deinstitutionalization, inclusion of children with special educational needs in regular community schools must become a strategic direction of the educational policies.

The European Agency for Development in Special Needs Education, as the main European Union organization aiming at improving the education policy and educational practices of students with SEN, recommends that systematic collection and analysis of data is needed for the implementation of international policy directives, evidence that would guide the implementation of the relevant Integrated

¹ Universal Declaration of Human Rights (1948), Convention against Discrimination in Education (1960), Convention on the Rights of the Child (1989), World Declaration on Education for All (1990), World Plan of Action on Education for Human Rights and Democracy (The Montreal Declaration) (1993), Salamanca Declaration and Framework for Action (1994), United Nations Convention on the Rights of Persons with Disabilities (2009), Incheon Declaration and Framework for Action (2015).

Development Education provisions and tasks (European Agency for Development in Special Needs Education, 2011).

Documents² and strategies³ adopted In Lithuania in the last 25 years since signing the Salamanca Declaration (UNESCO, 1994) have legally created favourable conditions for the development of each student according to their needs and opportunities in general education schools, providing educational assistance and access to education. Two forms of participation of children with special educational needs (SEN) were introduced: inclusion, where the child is educated in the regular class with other children, and partial integration, where a small group of children with SEN are educated as a separate group within a general education school. Special schools or special education centres for children with physical disabilities and neurological impairments, intellectual disabilities, visual impairment, hearing impairment, behavioural and emotional disorders, or other health problems continued to operate. In Lithuanian general education schools, 11.92% of children aged 6-21 have SEN; 10.46% attend regular classes in mainstream schools, .34% of the children attend special education classes, and 1.12% of the children are educated in special schools or special education centres (Official Statistics Portal, 2018). Although the percentage of students with SEN in special schools or special education centres is not high, the education of students with SEN in segregated educational institutions regulated by national legal instruments is not in line with the provisions of the International Documents (Centre for Special Education and Psychology, 2016). In order to reduce the stillprevailing dualism in Lithuania's education system, first steps towards deinstitutionalization were made in 2014. The Order of the Minister of Social Security and Labour approved the Action Plan 2014-2020 for the Transition from Institutional Care to Family and Community Services for the Disabled and Children left Without Parental Care.

Despite the fact that Lithuanian laws, normative documents and statistics show the ongoing process of inclusive education, it is not possible to judge the

² Concept for Bilingual Education of the Deaf (2007), ratified the United Nations Convention on the Rights of Persons with Disabilities (2010), The Law on Education of the Republic of Lithuania (2011), The List of the Common Criteria for Admission to the State-Run and Municipalities General Education School or Vocational Education Institution (2011), 2014– 2016 Action Plan of the Strengthening the General Education Schools implementing Primary and Lower-Secondary Education Programmes and the Inclusive Education (2014),The Good School Concept (2015); The Guidelines for the Change of General Education Schools (2017).

³ The National Education Strategy for 2013–2022 (2013).

quality of this ongoing process from these indications. While analysing the current research, it is observed that teachers of general education schools face a number of challenges implementing the principles of inclusive education (Baloun, Kudláček, Sklenaříková, Ješina, & Migdauová, 2016; Block, Hutzler, Barak, & Klavina, 2013; Block, Kwon, & Healy, 2016; Griggs & Medcalf, 2015; Jeong & Block, 2011; Jerlinder, Danermark, & Gill, 2010; Ko & Boswell, 2013; Kwon & Block, 2017, Hutzler & Barak, 2017; Li, Wang, Block, Sum, & Wu, 2018; Tindall, Culhane, & Foley, 2016). Developing the support system in educational institutions, increasing the effectiveness of assistance, ensuring the training of teachers for working with children with different educational needs and ensuring continuous improvement of qualifications and competences, adapting the process of educational organization and the environment, proper financing, increasing the number of specialists and developing services - these are the challenges that the education system is still facing not only in Lithuania, but in other countries as well (de Boer, Pijl, & Minnaert, 2010; Fisher, 2017; Galkienė, 2016; Hutzler & Barak, 2017; Kwon & Block, 2017; Li et al., 2018; Umhoefer, Vargas, & Beyer, 2015). The Inclusive Education Teacher Profile defines four key values that teachers based on inclusive education should rely on (European Agency for Development in Special Needs Education, 2012). It is respect for students' diversity, considering diversity as the opportunities and resources that are basic for every student's education; helping each student with high expectations for their achievements; cooperation and teamwork; and personal professional development, assuming responsibility for lifelong learning, based on the principle that teaching means studying.

Teachers need a range of skills, expertise, knowledge, pedagogical approaches, adequate teaching methods and materials as well as time if they are to address diversity effectively within their classrooms (European Agency for Special Needs and Inclusive Education, 2014; Florian, 2015). This leads the researchers to believe that staff development is the key to the success of inclusion, and an attitudinal change is probably a prerequisite for ensuring teachers' readiness, confidence, and sense of personal responsibility in the process of inclusion (Alquraini & Gut, 2012; European Agency for Special Needs and Inclusive Education, 2014; Fisher, 2017).

Inclusive Education and Classroom Practice Summary Report (European Agency for Development in Special Needs Education, 2003) states that the process of inclusive education is greatly influenced by the way teachers work in the classroom. While implementing the principles of inclusive education in the classroom, it is necessary to pay attention to teacher-related factors, such as teacher's working methods, teachers' attitudes towards inclusion, and teachers' professional self-efficacy (SE). In recent years, the concept of teachers' professional SE has been identified as one of the most significant factors affecting the teaching occupation, as it influences not only the teachers' abilities, motivation, and satisfaction, but also students' achievements (Al-Alwan & Mahasneh, 2014; Ashton & Webb, 1986; Friedman & Kass, 2002). Teacher SE refers to teachers' beliefs that they can bring about desirable changes in students' behaviours and achievements (Bandura, 1997; Guo, Justice, Sawyer, & Tompkins, 2011). The teacher who shows positive attitudes towards the achievement component of teacher attitudes towards inclusion is inevitably a teacher with high levels of pedagogical SE (Fisher, 2017). The current situation of inclusive education indicates that the teacher plays one of the most responsible and difficult roles (Navarro, Zervas, Gesa, & Sampson, 2016). The teacher not only has to transfer the knowledge, but also to adapt it to students who have different levels of skills (Block, Taliaferro, Harris, & Krause, 2010; Griggs & Medcalf, 2015; Qi & Ha, 2012). Teachers accepting diversity of students are able to make flexible decisions, and to transfer ideas about natural differences between people with equal values (Galkienė, 2016; Griggs & Medcalf, 2015; Klavina, Jerlinder, Kristén, Hammar, & Soulie, 2014; Ko & Boswell, 2013). In an inclusive class the teacher has to create a learning environment where every student will feel that he/she is a wholesome participant of the teaching and learning process (Block et al., 2010; Griggs & Medcalf, 2015; Karani & Skordilis, 2016). The teacher has to create the environment for all, where personal weaknesses and disadvantages are not highlighted, where a student feels safe and an equally important member of the community, and where measures are found to turn personal weaknesses and disadvantages into benefits and advantages in certain situations (Booth & Ainscow, 2011; Ko & Boswell, 2013). This all can be achieved only by a teacher who is confident and who relies on the knowledge and its practical application at work (Block et al., 2010; Griggs & Medcalf, 2015). In order to create such an environment, the teacher must have knowledge and confidence in her/his skills and in the capability to apply this knowledge in various specific situations (Block et al., 2013; Block et al., 2010; Griggs & Medcalf, 2015). The way the teacher adapts the

task, modifies the goal, applies educational methods and handles difficult situations depends on his or her level of situation and task-specific confidence. SE refers to an individual's conviction (or confidence) about his or her abilities to mobilize the motivation, cognitive resources, and courses of action needed to successfully execute a specific task within a given context (Bandura 1977, 1997; Stajkovic & Luthans, 1998). Teachers' SE is their confidence and belief in being able to cater for the varied needs of all students in an inclusive school setting (Block et al., 2010; Karani & Skordilis, 2016; Klassen & Tze, 2014). Therefore, SE beliefs determine how environmental opportunities and impediments are perceived and affect the choice of activities, how much effort is expended on an activity, and how long people will persevere when confronting obstacles (Bandura, 2006). SE theory, applied in the educational context, has sparked a rich line of research into how teachers' SE beliefs are related to their actions and to the outcomes they achieve (Tschannen-Moran & Woolfolk Hoy, 2007). Furthermore, individual studies have found that teachers' SE is one of the strongest predictors of their attitudes towards inclusion (Block et al., 2010; Ilić-Stošović, Nikolić, & Popadić, 2015; Karani & Skordilis, 2016). SE and goals are widely touted as two of the more important constructs in psychology and management (Vancouver, Thompson, & Williams, 2001). Stajkovic and Luthan's (1998) meta-analytical findings support a highly significant positive correlation between such SE and work-related performance. This makes it obvious how important SE is to the professional learning and development since research has shown that it is related to human performance in the workplace (Ozyilmaz, Erdogan, & Karaminogullari, 2018; van Daal, Donche, & De Maeyer, 2014). SE is a future-oriented belief about the level of competence a person expects he or she will display in a given situation (Tschannen-Moran & Mcmaster, 2009).

Research problem. In Lithuania, as in other countries, most of the students with SEN (87.74%) are educated in regular education classes (Official Statistics Portal, 2018). It shows that when including these children into general education class activities, the inclusive environment should be created, and every participant in this environment must receive a quality service and feel equally included in the education process. Teacher quality has been shown to be the most important school-related factor that impacts student achievements, therefore as a consequence, since the early 1990s, many international governments have prioritised the improvement and evaluation of effective teachers and effective

teaching (Deppeler, Loreman, & Smith, 2015).

Increasingly, studies highlight the benefits of physical activity while developing positive attitudes towards inclusive education for students with SEN (Klavina et al., 2014). Thus, inevitably the physical education (PE) class plays an important role for developing the inclusive education process. Research confirms that the PE class is one of the most favorable environments in which students' positive attitudes towards the inclusion of students with SEN into common class activities can be formed (Hutzler & Levi, 2008; Kudláček, Ješina, & Wittmannová, 2011; Campos, Ferreira, & Block, 2013). The PE class is an environment where students with different skills should be able to experience and realize themselves through movement, and it also provides excellent conditions to observe and evaluate each other, recognize limits of each other's abilities and feelings, understand expectations and participate in the educational process actively (Bailey, 2006; Galkienė, 2016; Grenier, Dyson, & Yeaton, 2005; Griggs, & Medcalf, 2015; Klavina et al., 2014; Ko & Boswell, 2013) and to recognise that PE is one of the most favourable disciplines capable of developing and maintaining values necessary for the effective development of inclusive education (André, Deneuve, & Louvet, 2011; Grenier et al., 2005; Hutzler, 2003; Hutzler, 2007; Klavina et al., 2014; Polvi & Telama, 2000; Qi, Wang, & Ha, 2016; Tubić & Đorđić, 2012). A positive environment should be created in order to develop students' positive attitudes towards colleagues with SEN. PE teacher plays an important role in the process of creation of this environment (Block et al., 2013). Research also shows that many PE teachers believe that they are not well trained to include students with SEN in a regular PE class (Baloun et al., 2016; Eden & Hutzler, 2015; Jovanović, Kudláček, Block, & Djordjević, 2014; Kudláček, Baloun, & Ješina, 2018; Reina, Hemmelmayr, & Sierra-Marroquin, 2016; Taliaferro, Hammond, & Wyant, 2015; Tekidou, Evaggelinou, Papaioannou, & Block, 2015; Tindall et al., 2016). These studies indicate that teachers lack confidence in their own abilities to create an inclusive learning environment in a class. Based on social cognitive theory (Bandura, 1986), such a teachers' disposition often determines the attitudes of students towards their peers with SEN. Ensuring inclusive environment in the PE class requires the knowledge about adapted physical education (APE). Usually the course of APE is not included in PE teacher training or the number of credits of this course of study is small.

According to the actual situation in Lithuania, the modules covering the

inclusion of students with special needs into the regular PE class were introduced in Physical Education study programmes delivered in Lithuanian universities only in 2007, i.e. later than the integration/inclusion process started in Lithuania. The first PE teachers who studied courses covering the inclusion of students with special needs into regular PE classes graduated from the university in 2012. The statistical data shows that Lithuanian PE teachers working in general education schools are 45-65 years old and older, PE teachers of this age make up 68.5 % (Education Management Information System, 2018). Based on these data it can be assumed that a large proportion of employed PE teachers' have not studied courses related to inclusive education; also no monitoring is provided about how PE teachers are prepared to work in inclusive environments and whether they have an opportunity to acquire knowledge about the development of inclusive environments in the class such as APE. Although specialists in Adapted physical activity have been trained in Lithuanian Sport University in Lithuania since 1999, the support of these specialists for teachers has not been legalized and recognized so far.

Currently there is still a lack of equal opportunities for children with disabilities to participate or successfully study in physical education classes and sport or other physical activity clubs (Kennedy, 2014). The research field of inclusive physical education classes is gaining interest as it is still one of the primary and most important physical education environments in which children with disabilities can develop physical abilities, play team games, develop social skills, and broaden self-knowledge. Sport or other physical activity is a great opportunity to promote social integration of children with disabilities, and that would develop physically active generation engaged in sports in the future, reduce exclusion and discrimination, and inevitably promote deinstitutionalisation. Therefore, it is necessary to develop this field of research by studying teachers' confidence in their knowledge to create an inclusive learning environment and to search for the best ways to develop it. This highlights the relevance of the dissertation research and the research problem: how knowledge and ways of transferring it influence the self-efficacy of physical education teachers in creating an inclusive learning environment for students with disabilities?

Research questions raised made it possible to formulate the following **research hypothesis**: knowledge and ways of transferring it have a different but positive effect on the self-efficacy of physical education teachers to create an

inclusive learning environment for students with disabilities.

The **main object** of this dissertation was the development of physical education teachers' self-efficacy in order to create an inclusive educational environment.

The aim was to reveal the possibilities of developing the self-efficacy of physical education teachers to create an inclusive education environment. To achieve the aim, the following research objectives were set:

1. To substantiate the theoretical preconditions for the development of selfefficacy of physical education teachers to create an inclusive education environment.

2. To create a theoretically grounded self-efficacy education model for physical education teachers to develop an inclusive education environment and to carry out an educational experiment following the created model.

3. To validate the relevant instruments and use them to identify the selfefficacy of physical education teachers and attitudes of peers towards inclusion of children with disabilities into physical education class activities.

4. To evaluate the self-efficacy of physical education teachers and attitudes of peers towards inclusion of children with disabilities into physical education class activities before and after the educational experiment.

Statements presented for defence:

1. SE-PETE-D-LT and PESEISD-A-LT are reliable and valid tools for investigating the self-efficacy of physical education teachers towards inclusion of students with disabilities into PE classes.

2. CAIPE-LT is a reliable and valid tool for investigating children's attitudes towards inclusion of peers with disabilities.

3. Physical education teachers' self-efficacy depends on the type of disability, personal attributes, sources of self-efficacy (mastery experience, vicarious experience, social persuasion, and physiological states), behaviours, and perceived challenges.

4. The attitudes of students towards inclusion of their peers with disability into general physical education class activities depend on the type of disability and personal attributes.

5. The model of development of physical education teachers' self-efficacy towards the development of inclusive educational environment is based on the ideas of self-efficacy and social learning theories and has a positive impact on physical education teachers' self-efficacy towards the development of inclusive educational environment.

The following research methods were applied in the dissertation:

1. Analysis of statistical data, legal documents and scientific literature of Lithuania and other countries.

2. Questionnaire survey was used to determine the self-efficacy of physical education teachers to create an inclusive educational environment for students with disabilities (intellectual, physical, visual and autistic spectrum disorders) and students' attitudes to their peers' with disabilities (intellectual, physical, visual) participation in physical education, and to assess the direct impact of applied education programs on the self-efficacy of physical education teachers creating an inclusive educational environment, and the indirect impact of curricula on the attitudes of children towards the participation of peers with disabilities in physical education classes.

3. The educational experiment was used to test how the self-efficacy of physical education teachers was naturally affected when developing inclusive educational environments.

4. The statistical data were processed using SPSS 22.0 software and AMOS 23.0. The Kolmogorov-Smirnov test, Student's t-Test, Mann-Whitney U test, Cronbach's alpha coefficient, Spearman-Brown's correlation coefficient, Pearson's correlation coefficient, Spearman's rank correlation coefficient, Hedges' coefficient of effect size, Cohen's coefficient of effect size, Chi square test, General Linear Modelling repeated measures, Stepwise multiple regression analysis, Exploratory factor analysis and Confirmatory factor analysis were used for data analysis.

The methodology of the dissertation was based on the following theoretical approaches: the ideas of humanistic philosophy – Self-efficacy Theory and the Social Cognitive Theory.

The theory of self-interest was used to understand the concept of physical education teachers' self-efficacy towards working in an inclusive educational environment and, based on the conceptual basis of this theory, to change the inactive and non-innocent behaviour of physical education teachers working in general education schools, who are not enough self-confident to create an inclusive educational environment for students with disabilities in physical education classes. The programs developing self-efficacy of physical education teachers were formed on the basis of this theory.

Based on the three-dimensional model of determinism of the three components of the Social Cognitive Theory, where human behaviour is determined by the constant interaction of cognitive, behavioural, and environmental factors, one can understand human nature and its potential. It is the person's ability to operate knowledge, plan, anticipate the consequences of their behaviour, learn by observing the actions of others. On the basis of this theory, the mechanism of the operation of the educational experiment was based. It was assumed that self-efficacy of physical education teachers would be positively influenced by the teachers who had a higher sense of self-efficacy. As a result of this interaction, the increased sense of students towards the inclusion of peers with disabilities in general physical activity. Positive changes in psychological indicators during interactions between a teacher and a student would create preconditions for a favourable psychological climate in physical education classes and facilitate the inclusion of disabled students in the overall class activity.

Novelty of the work. Theoretical model of self-efficacy of physical education teachers to create an inclusive education environment in a classroom for students with disabilities was developed and grounded.

Trends revealing the ability of physical education teachers to develop selfefficacy for creating inclusive learning environment for students with disabilities in regular class were revealed.

In the study, the effectiveness of strategies was first assessed not only by changes in the physical education teachers' self-efficacy, but also by changes in the attitudes of students towards the inclusion of peers with disabilities into the general education class activity, which were affected by their physical education teachers' self-efficacy.

This is the first study in Lithuania where instruments to evaluate physical education teachers' self-efficacy and the attitudes of children towards inclusion of their peers with disabilities into general physical education class activities were used.

The original instrument for evaluating children's attitudes was improved, which allowed evaluating the attitudes of students not only towards their peers with physical disabilities, but also intellectual disabilities and visual impairments.

Practical significance of the doctoral dissertation. Validation of these instruments (Self-Efficacy Scale for Physical Education Teacher Education Majors towards Children with Disabilities, Physical Educators' Self-Efficacy towards

Including Students with Disabilities – Autism, Children's Attitudes towards Integrated Physical Education – Revised) in Lithuania strengthens the reliability and validity of these instruments. It opens up the possibility for Lithuanian scientists to develop a field of research related to the development of an inclusive environment for students with special educational needs in physical education classes, to carry out international level research and to evaluate the effectiveness of developed strategies for increasing physical education teachers' self-efficacy in developing an inclusive environment in the class.

The impact of changes of the attitudes of students toward including their peers with disabilities into physical education classes because of self-efficacy changes of physical education teachers assessed in this study revealed not only the direct impact of applied educational programs on the self-efficacy of physical education teachers, but also the indirect impact of these programs on the attitudes of students towards participation of their peers with disabilities in regular physical education classes.

Research of this kind reinforces Self-efficacy and Social Cognitive Theories and helps to reveal the mechanisms of prevailing links between the changes in a person's SE and the impact of these changes on others.

Eighteen-hour APE online implementation strategy course opens up the opportunity to create an APE portal in Lithuania that constantly updates and stores information about creating an inclusive environment in PE classes and provides PE teachers with remote access to APE courses. The development and maintenance of this website in Lithuania would be beneficial for the development of PE teachers' SE by strengthening cooperation between Lithuanian PE teachers and other professionals. Also, this website would provide a forum for cooperation with PE teachers, APE specialists and scientists from different countries. Based on the implementation strategy of the 40-contact-hour APE course, education centres could develop compulsory upgrade courses for PE teachers and other professionals.

Results of instrument validation, situation and the experimental research are of scientific and practical significance not only for Lithuanian scientists, physical education teachers, educational specialists, but also for research projects carried out by scientists from other countries.

Structure and scope of the dissertation. The dissertation consists of a glossary of terms, a list of abbreviations, an introduction, four parts, conclusions, recommendations, research limitations, references and 8 appendices. The volume

of the dissertation without appendices is 207 pages. The study contains 32 tables and 17 figures and refers to 215 literature sources.

List of publications on the dissertation topic: Publications in the scientific journals (ISI WEB of science)

1. Dovilė Selickaitė, Yeshayahu Hutzler, Kazimieras Pukėnas, Martin Block, & Diana Rėklaitienė (2019). The analysis of the structure, validity and reliability of an inclusive physical education self-efficacy instrument for Lithuanian physical education teachers, *SAGE Open* (Minor Revision – no additional reviews required)

2. Dovilė Selickaitė, Yeshayahu Hutzler, Kazimieras Pukėnas, & Diana Rėklaitienė (2019). Physical educators' self-efficacy towards including students with autism spectrum disorder: Lithuanian perspective. *Social Behavior and Personality: an International Journal* (Accepted)

Publications in international scientific database journals

1. Selickaitė, Dovilė, Hutzler, Yeshayahu, Pukėnas, Kazimieras, Block, Martin E., & Rėklaitienė, Diana (2018). Validity and reliability of a Lithuanian physical education teachers' self-efficacy scale towards inclusion of students with autism spectrum disorders. *Baltic Journal of Sport & Health Sciences*, *3*(110), 38–49.

2. **Dovilė Selickaitė**, Diana Rėklaitienė, Martin Block, Kazimieras Pukėnas, & Mindaugas Kavaliauskas (2018). Validation of the children's attitudes towards integrated physical education – revised inventory in Lithuanian. *Pedagogy*, *132*(4), 211–227.

Articles in other peer-reviewed scientific publications

1. **Selickaitė, Dovilė**, & Rėklaitienė, Diana (2015). Kūno kultūros mokytojų savaveiksmiškumas dirbant inkliuzinėse kūno kultūros pamokose: pilotinis tyrimas. *Sportinį darbingumą lemiantys veiksniai* (VIII) [Elektroninis išteklius]: mokslinių straipsnių rinkinys, p. 111–121.

Presentations in Scientific conferences

1. Réklaitiené, Diana, **Selickaité, Dovilé**, & Požériené, Jūraté (2015). Moving away from special education towards inclusive education: What is successful practice of organizing physical education for children with intellectual disabilities in Lithuania? *Adapted physical activity: integration and diversification: the 20th International Symposium on Adapted Physical Activity: book of abstracts:* 11–15 June, Netanya, Israel p. 78–78. 2. Selickaitė, Dovilė, & Rėklaitienė, Diana (2015). Kūno kultūros mokytojų saviveiksmingumas dirbant inkliuzinėse kūno kultūros pamokose (Bandomasis tyrimas). Sportininkų rengimo valdymas ir sportininkų darbingumą lemiantys veiksniai: respublikinė mokslinė konferencija, gruodžio 17 d., p. 57–60.

3. **Selickaitė, Dovilė**, & Rėklaitienė, Diana (2016). Olimpinės dienos programos poveikis Kauno šv. Kazimiero pagrindinės mokyklos mokinių požiūriui į negalią turinčius bendraklasius. *Respublikinė mokytojų ir mokinių kūrybinių bei tiriamųjų darbų konferencija "Mano Olimpas"*, balandžio 7 d.

4. Selickaitė, Dovilė, Block, M. E., Hutzler, Y., Požėrienė, Jūratė, & Rėklaitienė, Diana (2016). Validation of the Self-Efficacy Scale for physical education teachers towards inclusion in Lithuania. *European Congress of Adapted Physical Activity*, Olomouc, Czech Republic, June 15–17th: book of abstracts, p. 57–57.

5. Selickaitė, Dovilė, Kaunietė, Ema, & Rėklaitienė, Diana (2017). The impact of paralympic day on the students' attitude to inclusive physical education class. *Multiplicity of Sports Science in Practice: Abstracts of the 10th Conference of the Baltic Sport Science Society*, Riga, Latvia, 26–28 April, p. 25–26.

6. Selickaitė, Dovilė (2017). The effectiveness of educational strategies for the development of physical education teachers' self-efficacy creating inclusive learning environment. *I-oji Tarptautinė edukologijos doktorantų konferencija*, spalio 13–14 d. Klaipėdos universitetas, Klaipėda, Lietuva.

7. Selickaitė, Dovilė, Hutzler, Yeshayahu, Pukėnas, Kazimieras, Block, Martin E., & Rėklaitienė, Diana (2018). The effectiveness of educational strategies for the development of physical education teachers' self-efficacy creating inclusive learning environment. *European Congress of Adapted Physical Activity*, University of Worcester, Worcester, United Kingdom, June 3–5th.

8. Réklaitiené, Diana, **Selickaité, Dovilé**, Hutzler, Yeshayahu, Pukénas, Kazimieras, & Block, Martin (2019). Adapted physical education knowledge impact to physical educators' self-efficacy towards inclusion students with autism spectrum disorder. *The 22th International Symposium on Adapted Physical Activity*, 14–18 June, Charlottesville, VA, USA

During the preparation of the dissertation I have participated in the Erasmus + program for higher education. Scientific Internship Practice was completed at the Department of Special Education, Stockholm University, Sweden (April–June 2016).

1. LITERATURE REVIEW

The main aim of this research was to develop and evaluate the efficiency of two educational strategies for the development of physical education teachers' selfefficacy for creating inclusive learning environment. Based on this, an overview of the relevant literature is presented in eight sections: (1) Inclusive education of children with special education needs in Lithuania; (2) Conceptions of inclusive education and inclusive special education; (3) Inclusive learning environment; (4) Theoretical substantiation of the development of physical education teachers' self-efficacy for creating an inclusive educational environment; (5) Physical education teachers' self-efficacy for including students with special educational needs to the regular physical education classes; (6) Attitudes of students towards the participation of peers with special educational needs in a common physical education class; (7) The ways to develop self-efficacy of physical education teachers to create an inclusive educational environment for students with special educational needs in a regular physical education class; (8) Construction assumptions of the theoretical model of developing physical education teachers' self-efficacy to create an inclusive educational environment.

1.1. Inclusive education of children with special education needs in Lithuania

In the Law on Education of the Republic of Lithuania, special educational needs are defined as the need for help and service in the process of education arising from exceptional personal abilities, congenital or acquired disorders, adverse environmental factors (Parliament of the Republic of Lithuania, 1991). Students with SEN are divided into three main groups: students with disabilities, students with difficulties, and students with disadvantages in learning. Students with disabilities is a group of students with developmental, sensory, physical functioning and other health disorders the biological origin of which cannot be eliminated by pedagogical means (Ministry of Education and Science of the Republic of Lithuania, 2013). Students with difficulties is a group of students with learning (two or more subjects – reading, writing, mathematics and other subjects), as well as behavioural and emotional, language and speech disorders that occur while studying the compulsory

school program (Ministry of Education and Science of the Republic of Lithuania, 2013). Students with disadvantages in learning is a group of students who, due to the unfavourable (cultural/linguistic, pedagogical, socio-economic) environment or prevailing circumstances, restrict the possibilities to realize their abilities for studying general education programs (Ministry of Education and Science of the Republic of Lithuania, 2013). Groups of students with SEN are identified and their special educational needs are divided into small, medium, significant and profound, according to the order of the Minister of Education and Science, the Minister of Health, the Minister of Social Security and Labour. According to the data of the Lithuanian Department of Statistics, in the 2017-2018 academic year, 11.93% of students with special educational needs were educated in general education schools; 87.75% of these students with SEN, were educated in regular classes (full integration), 2.85% were in special and educational classes (partial integration), and 9.40% were taught at special schools and educational centres (Official Statistics Portal, 2018). The analysis of students with SEN statistics in Lithuania showed that most of the students (77.50%) had disabilities such as learning disorders, general learning disorders, specific learning disorders, reading disorder, writing disorder, disorder of learning mathematics, non-verbal learning disorders, behavioural or/and emotional disorders, hyperactivity or/and attention deficit disorders, behavioural disorders, emotional disorder, speech and language impairments. Other 21.47% of students with SEN had disabilities such as intellectual, visual impairment, hearing impairment, physical disabilities and neurological impairments, deaf-blind, multiple developmental disorders, pervasive developmental and other disabilities, and 1.03% of students with SEN were disadvantaged in learning.

When analysing the statistics by the academic year, we see that the number of students with disabilities in regular classes is decreasing each year, and the number of students with disabilities in special classes and special schools/special centres is increasing (Figure 1). Also the Committee of United Nations on the Rights of Persons with Disabilities (2016) noted that in Lithuania, the special education system or home education is still too often a choice for disabled children, and many students with disabilities, especially those with visual, hearing, psychosocial and/or intellectual disabilities, from preparatory, primary and secondary schools, are redirected and forced to attend special schools due to the lack of well-adapted premises and accessibility in the general education system (Center for Special Education and Psychology, 2016).



Figure 1. Distribution of students with SEN by SEN group, form of education and school year (Source: Official Statistics Portal, 2018)

In such SEN groups as students with difficulties and students with disadvantages in learning, this tendency has not been found (Figure 1). Based on this data, we can assume that inclusion of students with disabilities in regular education classes is problematic. This may be due to reasons such as not adapted environment, unprepared teachers to include students with disabilities into the general class activities, the lack of support for teacher and student, the attitude of the school community (administration, teachers, classmates and parents) towards the inclusion of students with disabilities (Campos, Ferreira, & Block, 2015; Hernandez, Hueck, & Charley, 2016). All of this creates a negative psychological climate in the classroom or even in the school community, which leads to solutions such as transferring students to special classes or even special schools/education centres.

In the last 30 years, there has been a global agreement that all children have the right to be formally educated individually and/or together, including children who have special educational needs. It is enshrined in the Convention on the Rights of the Child (The United Nations, 1989), as well as the Convention on the Rights of Persons with Disabilities (The United Nations, 2006). Inclusive education for children with SEN is also addressed in several significant international declarations, including the World Declaration for Education for All (1990), the UNESCO Salamanca Statement and Framework for Action (UNESCO, 1994), and the Incheon Declaration and Framework for Action (UNESCO, 2015).

Analysing adopted legal documents and changes in statistical indexes in Lithuania over the last 28 years after the restoration of independence, significant steps have been taken in relation to inclusive education of students with special educational needs. When discussing the steps taken in the Lithuanian education system towards inclusive education, the concepts of "integration" and "inclusion" will be used. The concept of "integration" will be used in relation to the place of special needs education when students are taught together with their peers in the general education institutions (Meijer, 1998). The concept of "inclusion" is understood when individuals with special education needs are not only educated with their peers, but also on the basis of general education programs, qualitatively individualized and adapted to their special needs.

The first step towards inclusive education (integration) was taken in 1991 when The Law on Education of the Republic of Lithuania (1991) was adopted and it states that "all children of pre-school and school age with physical or mental

deficiencies are educated at home, at pre-school institutions in general or correctional groups, at special pre-school institutions, in general or correctional schools of general education schools, in special schools as close as possible to parents' place of residence". Another important step was taken in Lithuania in cooperation with other governments of 91 countries of the world and the Salamanca Declaration (1994) signed by the representatives of 25 international organizations on the education for students with SEN reform principles, policies and practices of dimensions for its development, on the basis of the principles of integration. Based on this step, in 1998, the Republic of Lithuania Law on Special Education (1998) was adopted, which follows the principles which are closer to inclusive education: equal opportunities – people with special needs receive the same education and education conditions as other members of the local community; integration education of people with special needs, together with other members of the local community, and equal participation in community life; decentralization involvement of the family, community and local self-government institutions in the education of persons with special needs; universality - the development of all persons with special needs; continuity - education and lifelong education for people with special needs; transparency and flexibility - co-ordinated activities of general education and special education institutions ensuring the continuity of education and training of people with special needs; educational functionality – the development of the autonomy of individuals with special needs and the ability to live in the community.

Persons with special needs are educated in general or special classes of all types of general education schools, in special schools or other special educational institutions, at vocational schools in the relevant basic vocational training stage. On the basis of this law, the following forms of special needs education were formed: full integration; partial integration; education at a special education institution; teaching at home. This law provides information on the adaptation of curricula in response to the students' SEN: special programs for the development of special needs of people with SEN, individual curricula, and adapted general education programs. Educational institutions are adapted for people with special needs and students with SEN are provided with compensatory techniques for education. Adomaitienė (2001) revealed that it is difficult to find an integrated interconnection between the two general and special education policy (Education and Special Education) regulations. General and special education systems are separated from

other educational institutions, because they have different sources of funding, different dependencies and controls, distinct educational tools, the specialists of both systems do not interact with each other. Under such a dualistic system of education management, the option of integrated general education for students with special needs in the general education, vocational education and higher education seems to become a legal declaration only (Adomaitiene, 2001). Trying to eliminate the dualism in the educational system in 2011, the Law on Special Education (1998) was no longer in force and in the same year the Law on the change of the Law on Education of the Republic of Lithuania (2011) was adopted. This Law states that learning is a natural right of every human being. The Law on the Amendment of the Law on Education (2011) defines the special educational needs as the need for the process of development of assistance and services, arising from exceptional personality abilities, congenital or acquired disadvantages, and adverse environmental factors. Also in this law, a separate article (Article 14) describes the education of students with special educational needs, the purpose of which is to help the students to learn in accordance with their abilities, to acquire education and qualifications, recognizing and developing their abilities and powers. Since 2003, Lithuania's education system has been introducing ideas of inclusive education, that is, adaptation, support and individual education planning for the inclusion of people with special needs. The Ministry of Science and Education of the Republic of Lithuania prepared a strategic plan for 2014-2016, where one of the main aims was to develop measures of inclusion for children with SEN. According to the consolidated version of the current Lithuanian Law on Education (2018), the development of students with SEN is being implemented by all schools that provide compulsory and general education, other educational institutions, and, in some cases, schools (classes) for the education of students with SEN; students with SEN can complete formal education programs at a shorter or longer than a commonly set time, they can study intermittently, these programs can be completed by separate modules; students with very large and large special educational needs may study for up to 21 years in general schools (classes) for students with SEN; access to education is ensured by adapting the school environment, providing psychological, special pedagogical, special and social pedagogical assistance, providing technical support means for education in the school and special educational tools, other methods prescribed by law; appropriate adaptation of assessment of learning outcomes. The consolidated edition of the Law on Education (2018) states that the teacher must educate on the basis of students' abilities and inclinations, strengthen the motivation of learning and confidence in their abilities, provide assistance to students with learning difficulties and special educational needs, adapt their subject program, content, methods.

Following the development of inclusive education in educational institutions, the Child Welfare Commission has been established in Lithuania, which is committed to create a safe and supportive environment for students. This commission organizes and co-ordinates the adaptation of educational programs to students with SEN, provision of education assistance, taking into account the needs of an educational institution, and performs other functions related to child welfare. There is also legal support for school and teacher. The purpose of this support is to provide information, expert, counselling, psychological and refresher assistance, which increases the efficiency of education and promotes improvement of school management and professional development of the teacher.

So in today's general education system in Lithuania, two forms of participation of children with SEN were introduced: inclusion, where the child is educated in the regular class with other children, and partial integration, where a small group of children with SEN are educated as a separate group within a general education school. Special schools for children with severe specific disabilities such as intellectual, visual, auditory, movement disorders or multiple developmental disorders continued to operate. In Lithuania, in the 2016-2017 academic years, there were 1067 municipal schools of general education, 999 of which were general educational schools and 68 schools had students with SEN (Education Management Information System, 2018).

According to the data provided by the European Agency Statistics on Inclusive Education (EASIE, 2018), the comparative analysis between the 28 reporting countries in Europe was carried out on the inclusion of students with SEN into the education system in the various European countries. The EASIE quantitative data collection involved country experts providing statistics in six data tables: "population and enrolment", "age samples of 9 (ISCED level 1) and 15 years (ISCED level 2)", "students with an official decision of SEN", "gender breakdown of students with an official decision of SEN", "age breakdown for ISCED level 1 of students with an official decision of SEN", "age breakdown for ISCED level 2 of students with an official decision of SEN". In order to put the quantitative data supplied by countries into a clear context, all countries
provided four areas of descriptive, qualitative background information: "A description of how the official decision of SEN used in the country relates to the agreed EASIE operational definition", "The proxy indicator for the 80% benchmark used for data collection", "A detailed description of what is meant by out of formal education within the country", and "How data on private sector education has been covered in the country information".

The comparative analysis of statistical data revealed that Lithuania was one of the leading European countries with the highest number of students with SEN (13.47%) (Figure 2).



Figure 2. 9–15 year-old students with an official decision of SEN (data for 2014–2015)

The analysis of statistical data by the form of inclusion of students with special educational needs (students included in the regular education class in special classes, special schools and non-formal education institutions) revealed that Lithuania was among five countries which had the largest number of students with SEN included into regular education classes (87.98%), (Figure 3). Comparing the statistics of the first five countries (Italy, Malta, Iceland, Norway, and Lithuania) by the forms of education of students with SEN, it was determined that in Lithuania, the majority of students with SEN were educated in special schools (8.27%) compared to Italy, Malta, Iceland, and Norway (Figure 3).



Figure 3. The distribution of 9–15-year-old students with SEN according to their place of study: regular education classes, special classes, special schools and non-formal education institutions (data for 2014-2015)

Yet despite international consensus on the rights of students with SEN, development of support systems in educational institutions, improvement of the support effectiveness, adequate training of teachers for working with children with different educational needs and ensuring continuous improvement of qualifications and competences, adaptation of educational organization process and environment, proper financing, increase of the number of specialists and development of services still remain the challenges to be solved for the educational systems of many countries (de Boer et al., 2010; Fisher, 2017; Galkienė, 2016; Hutzler & Barak,

2017; Kwon & Block, 2017; Li et al., 2018; Umhoefer et al., 2015).

The Lithuanian situation in the implementation of inclusive education provisions reviewed in this chapter revealed that Lithuania is one of the leading countries in the number of integrated students with special educational needs in mainstream schools. A more detailed analysis revealed that the Lithuanian education system faces challenges of involving students with special educational needs caused by disability. The Law on Education in Lithuania still does not define the concepts of integrated education and inclusive education, tolerates dualism in the education system, and there is still no control over the implementation of the provisions of inclusive education. Thus, further development of the literature review raises the need for the concept of inclusive education when it comes to the inclusion of children with special educational needs and how this concept is understood in other countries.

1.2. Conceptions of inclusive education and inclusive special education

Hornby (2014) suggests that inclusive education is a multidimensional concept that includes the celebration and valuing of difference and diversity and consideration of human rights, social justice and equity issues, as well as the social model of disability and a socio-political model of education. Inclusive education is a process that involves the transformation of schools and other centres of learning so as to cater for all children, including boys and girls, students from ethnic minorities, those affected by HIV and AIDS, and those with disabilities and learning difficulties (UNESCO, 2008). Education in postmodern society highlights the need for achievement whenever an educational process is based on nondiscrimination and equal opportunities, the uniqueness and dignity of every child to quality education for all (Angel & Dogaru, 2018). Inclusive education is described in the context of considering the paradigm of education for all, characterized by inclusive learning environment and quality education for all children. The aim of inclusive education is to eliminate social exclusion resulting from attitudes and responses to diversity in race, social class, ethnicity, religion, gender and ability. Inclusive education is central to the achievement of high-quality education for all learners and the development of more inclusive societies. The most controversial issue currently regarding the education of children with special educational needs is widely acknowledged to be that of inclusion or inclusive education (Hornby, 2014). Inclusive education is a continuous process, the development path of which has been different in each country since the Salamanca Declaration was signed in 1994.

With reference to the definition of inclusion, Armstrong et al. (2010) and Kiuppis (2018) pointed out that the term of inclusion is used in so many different ways that it can mean different things to different persons, or all things to all persons, therefore, it is important to clarify the meaning and implications of inclusion for the education of children with SEN. It is widely recognized that the policy of "full inclusion," with its vision of all children being educated in mainstream classrooms for all of their time at school, is theoretically unsound and practically impossible to achieve (Hornby, 2014). This is influenced by the fact that in many countries, there is insufficient input on teaching children with SEN in initial teacher education courses and limited in-service training on SEN that is available to teachers (Angel & Dogaru, 2018; Deppeler et al., 2015; Ko & Boswell, 2013). This shows that many teachers do not have the relevant attitudes, knowledge, and skills necessary for including children with a wide range of SEN in their classes and are also concerned that there will be insufficient material and financial resources, and in particular support staff, to effectively implement the policy of full inclusion (Campos et al., 2015; Hofman & Kilimo, 2014; Humphrey & Symes, 2013; Marimuthu & Cheong, 2015). Professor Hornby (2014) offers to form a new more realistic vision for the education of children with SEN to replace both inclusive education and special education. It is proposed that this will best be achieved by developing a theory of inclusive special education which synthesizes philosophies, policies, and practices from both special education and inclusive education in order to present a clear vision of effective education for all children with SEN. Professor Hornby (2014) made the analysis of each of the confusions about inclusive education and clarified the key values and components of inclusive special education: "inclusive special education requires a commitment to provide the best possible education for all children with SEN in the most appropriate setting, throughout all stages of a child's education, with a focus on effectively including as many children as possible in mainstream schools, along with the availability of a continuum of placement options from mainstream classes to special schools, implementing best practices from inclusive education, and involving close collaboration between mainstream and special schools and classes".

For both Lithuania and other countries, the concept of inclusive education, when it comes to children with special educational needs, poses great challenges for teachers. Most teachers do not have the required approach, knowledge and skills, and are not sure that including students with special educational needs they will receive the necessary support from other professionals, will be adequately equipped with material and financial resources. This situation shows that not all countries' education systems are financially capable of providing decent working conditions for teachers to work in inclusive settings, especially when it comes to involving pupils with disabilities. The next section will look at the concept of inclusive education and what role the teacher plays in creating this environment.

1.3. Inclusive learning environment

In inclusive education, it is important to create an inclusive learning environment in schools and classrooms, which is defined as a purposefully organized physical, social, and informative set of circumstances, in which a child forms and implements his/her experience: knowledge, skills, and attitudes towards himself/herself and the surrounding world (Šūmane, 2012). Creating an inclusive environment in both school and classroom contexts plays an important role as the creation of this environment leads to the development of inclusive education (Loreman, Forlin, & Sharma, 2014).

Grimes (2010) offers 17 indicators which reflect inclusive education in school and classroom. Those indicators are in the range from social and emotional, to peer support and parent involvement, along with academic indicators relating to student access and achievement. Grimes'(2010) indicators include that:

- 1. all children feel welcome in the school;
- 2. all students support each other in their learning;
- 3. all students are well supported by school staff;
- 4. teachers and parents cooperate well;
- 5. all students are treated equally as valued members of the school;
- 6. all students feel that their opinions and views are valued;
- 7. all students can access learning in all classes;
- 8. all students can access all parts of the school building;
- 9. all students attend school every day;

10. all students enjoy classes;

11. all students are engaged in all class activities;

12. all students achieve their learning in all subjects according to their individual ability;

13. all students learn together;

14. all students have access to appropriate health services as necessary;

15. school ensure that the all students enter the school;

16. all vulnerable children are successful in their learning;

17. school creates a school environment which supports all students' learning.

The analysis of the research results showed (Lancaster, 2014; Rozenfelde, 2016; Šūmane, 2012) that not only the adaptation of the curricula and the physical environment, but also the prevailing psychological climate in school and classroom play an important role in creating an inclusive educational environment. Rozenfelde (2016) revealed that the positive environment is formed by the following components: loyalty - to promote a sense of belonging, to accept each person, and to be confident of a group's ability to think and learn; trust - to involve group members in the decision-making process and to entrust each person certain responsibility by agreeing on learning outcomes; support - to provide assistance and encouragement in the learning process, committing to promote individual's growth and learning; dynamic tension – to strive for objectives energetically and enthusiastically and to preserve moral principles when confronted with learning difficulties; expectations - to set goals, to be clear about assumptions, opinions, and learning outcomes; communication - to exchange information about successes and failures and to create joint commitments within a group when sharing knowledge. McGhie-Richmond, Irvine, Loreman, Cizman, & Lupart (2013) found that teacher-related variables have been shown to influence the implementation of inclusion in the classroom. Attitudes, beliefs and self-efficacy of teachers are most important indicators which make the greatest influence on creating the psychological climate in the inclusive environment (Lancaster, 2014). Also the studies showed that positive teacher-parent communication and collaboration, ensured support from other specialist or school staff, teachers' training towards inclusion are important for creating an inclusive learning environment (Horn, Parks, & An, 2019; McGhie-Richmond et al., 2013). The surrounding environment and its influence has a very important role in the successful development of children's attitudes towards inclusion of peers with SEN and students' with SEN

self-esteem. Attitudes of bystanders and peers help children with special needs to be aware of themselves in the environment (Rozenfelde, 2016).

Teachers who teach elective courses expressed more positive attitudes towards inclusion than teachers who teach core subjects (McGhie-Richmond et al., 2013). For example, incorporating the arts or sport/physical activity among the academic subjects could improve the engagement, achievement, and retention of students who have special needs.

Universal design was described as creation of the environment and products that are available for anyone's use without adjustments and special assistance. Universal design is recognized as a new way of thinking, a conceptual and practical model that makes review an institution's and a teacher's work in a classroom: objectives, methods, materials, and evaluation in order to satisfy various students' needs, reduce barriers that exist in the inclusive education system, and create physical, informative, accessible and inclusive service environment (Rozenfelde, 2016).

The discussed survey results are summarized by Alberta Education on the website provided information and resources on establishing an inclusive learning environment:

• instructional supports – planning instruction that acknowledges and honours diversity means thoughtfully selecting instructional supports that maximize student achievement;

• differentiation – differentiated instruction is a philosophy and an approach to teaching in which teachers and school communities actively work to support the learning of all students through strategic assessment, thoughtful planning and targeted, flexible instruction;

• individualized program plan – students are at the center of the Individualized Program Plan and Individual Student Profile (IPP/ISP) process. When the focus is on students' individual strengths, needs and participation, the IPP/ISP process can provide many benefits for all partners;

• transitions – transitions are any events that result in changes to relationships, routines, expectations or roles. Although they are a normal part of life, these changes can be difficult for students;

• positive behaviour supports – positive behaviour supports is a school-wide effort to promote positive social and communication skills, while reducing and preventing problem behaviours;

• assistive technology for learning – assistive technology for learning is a subset of a broad range of technologies that enhance students' learning;

• welcoming, caring, respective and safe schools – students, parents and school authorities have responsibilities for ensuring welcoming, caring, respectful and safe learning environments that respect diversity and nurture a sense of belonging and a positive sense of self;

• medical conditions – teachers may need to access information about specific medical conditions and/or disabilities to better understand the learning needs of some students;

• gifted and talented – school-aged children who are gifted may have different strengths and needs, and may be very different from one another. Each student who is gifted has an individual profile of abilities, needs, interests and learning preferences;

• mental health – just like physical health, everyone has mental health. It begins at birth and continues throughout life. Good mental health is not merely the absence of mental health problems;

• childhood development – the first six years of a child's life are important to their development and future education. Children who are cared for and have positive experiences during the early years are more likely to develop and learn in ways that help them meet their full potential.

This chapter reveals that not only the financial effort to create the necessary material wealth in inclusive school/classroom, but also the teacher's personal qualities and psychological readiness, knowledge and skills play an important role in creating an inclusive educational environment at school/class. In an inclusive classroom, the teacher must be able to convey knowledge not only to use and adapt material resources to the needs and abilities of each child, but also to create a positive climate for it. The teacher must be able to uphold a sense of community among children with different abilities. One of the most favourable environments for fostering a sense of community amongst peers is lessons related to arts and sports/physical activity. The following section of the Literature Review will seek to reveal the theoretical attitudes and concepts that can be used to develop the teacher's personal qualities and their competence to create an inclusive learning environment for the child with special educational needs.

1.4. Theoretical substantiation of the development of physical education teachers' self-efficacy for creating an inclusive educational environment

The research in this paper is based on the Bandura Self-Efficacy Theory (1977) and the Theory of Social Cognition (1986). Based on these humanistic philosophy theories, the topics will be discussed: the role of SE in the teacher's professional activities, how the level of SE affects the environment and how the SE could be developed. Based on the theories discussed and the literature analysis, the theoretical model affecting the experiment will be presented at the end of the literature review section.

1.4.1. Theoretical assumptions of the self-efficacy concept

Self-Efficacy Theory (1977) constitutes the conceptual basis for changing the behaviour of those persons who are not confident and often weak-skilled, inactive and non-instigating (Adomaitiene et al., 2003). "One of the first psychological theories proposed to explain the method in which individuals might develop positive expectancies for the future is the theory of Self-efficacy (1977) developed" by Bandura (Lopez, 2009, p 419). Gallagher (2009) asserts that selfefficacy a powerful indicator allowing predicting the person's behavior, and academic, work, health and other outcomes. Self-efficacy has a powerful effect on the behavior and positive results (Gallagher, 2009). This theory of Self-efficacy states that psychological procedures, whatever their form, alter the level and strength of SE (Bandura, 1977). Self-efficacy is the person's trust in their abilities to achieve the desired results performing certain actions (Bandura, 1977). This trust is one of the most important determinants influencing personal behavior, especially when the person wants to carry out some actions for a long time and/or comes across with difficulties and challenges (Maddux, 2009). Self-efficacy beliefs refer to "people's judgments of their capabilities to organize and execute courses of action required attaining designated types of performances" (Bandura, 1986, p. 391). SE perceived by a person is a specific self-confidence form, manifested in the assessment of his or her own capabilities in a particular situation (Bandura, 1997).

In the paper "Self-Efficacy: Toward a Unifying Theory of Behavior Change" Bandura (1977) formalized the term "perceived competence" as a synonym of selfefficacy and in the Self-efficacy theory, he explained how this concept develops and influences the person's behaviour (Maddux, 2009).

Bandura (1977) described the influence of efficacy and outcome expectations on behaviour and outcome, and this mechanism of operation is presented as a diagram (Figure 4).



Figure 4. The difference between efficacy expectations and outcome expectations (Source: Bandura, 1977)

The term *Outcome expectance* was defined as personal self-assessment, when a particular behaviour will predetermine certain results (Bandura, 1977). The term *Efficacy expectation* is a belief that certain behaviour will be successful, when the person wants to perform a particular activity to achieve the results (Bandura, 1977). *Outcome* and *efficacy expectations* are differentiated, since the person can believe that certain activity will produce expected results, but if the person has strong doubts about that activity, whether he/she can or cannot take certain actions, it can negatively affect the person's behaviour and the expected results (Bandura, 1977). According to Bandura (1997), "People take action when they hold efficacy beliefs and outcome expectations that make the effort seem worthwhile. They expect that given actions can produce desired outcomes and believe that they can perform those actions" (p. 24). If the person wants to achieve the desired result, he/she must have necessary skills and sense of self-efficacy, that he/she will be able to control certain factors appearing under specific circumstances (Bandura, 1989).

The sense of self-efficacy is considered as a most important and comprehensive creative factor of personal agency, which helps to reveal how the certain behaviour, endeavour, persistence when encountering with difficulties, thinking models (intentions) and emotional reactions affect the final activity result (Lent & Hackett, 2009). Bandura (1997) suggested that individuals with high levels of SE beliefs are more likely to engage in an activity and more likely to attempt

difficult tasks, and as a result, those with high SE should perceive fewer challenges, as they feel they have the ability to confront obstacles and succeed if given appropriate effort. The Self-efficacy is a dynamic set of beliefs related with the person ability to perform a certain task or activity and also how these beliefs supplement personal skills when the person develops and uses own skills (Lent & Hackett, 2009). Bandura (1977, 1986) identified a number of factors influencing the cognitive processing of efficacy information arising from performance accomplishments, mastery experience, vicarious experience, verbal/social persuasion, and emotional arousal (physiological states) sources (Figure 5).



Figure 5. Major sources of self-efficacy information and the principal sources through which different modes of treatment operate (Source: Bandura, 1977)

The other theory, which this work will be based on, is Bandura's Social Cognitive Theory (1986). The previous Bandura's expanded Social Learning (1971) and Self-Efficacy (1977) theories are included into the Social Cognitive Theory. Social Cognitive Theory explains and reveals the principles of human thinking, motivation, influence and behavioural development (Bandura, 1986). This theory emphasizes the role of cognitive processes in justifying human behaviour and the interaction of this behaviour with the environment (Figure 6).

The interaction between these causal factors is considered to be essential in understanding the dynamics of human behaviour and the ways in which the activities of a person and the surrounding environment are influenced. Analysing these causal relationships in the causal system, social cognitive theory emphasizes various cognitive abilities that enable individuals to manage their behaviour.



Figure 6. Learning processes in terms of triadic, dynamic and reciprocal interactions among personal factors, environment and behaviours (Source: Bandura, 1986)

The theory involves factors that influence people's behaviour and behaviour, combining them into a coherent integrated system that emphasizes people's selfregulation abilities (Bandura, 1986). This theory is applied to substantiate the themes of positive psychology such as health promotion, academic motivation and performance, career development and adaptation at work, adaptation to various physical and psychological problems (Lopez, 2009). Research on Social Cognitive Theory has examined person variables that derive from the aforementioned basic cognitive capabilities, in particular, self-efficacy beliefs, outcome expectations, and personal goals (Bandura, 2006; Bembenutty, While, & DiBenedetto, 2016; Heslin & Klehe, 2006; Klassen & Tze, 2014; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). This theory discloses relationships between people and their environment (physical, social, and cultural) much more than the classic behaviourism theory allows. This theory creates new and advantageous conditions to promote research in psychology and discover huge perspectives in this science (Bandura, 2006). "Core social cognitive and social learning constructs that are believed to influence career goals include career-related self-efficacy and outcome expectations and role modelling" (Gomez, 2009, p. 123). It is likely that the people with strong selfefficacy will continue their activity and seek their aims even when they encounter with difficulties and (Tschannen-Moran et al., 1998). Such people more often feel satisfied with the quality of their life and have the courage to try new things (Gomez, 2009).

1.4.2. Conception of teacher's self-efficacy in the class context

The teachers' psychological characteristic such as self-efficacy to teaching effectiveness is increasingly emphasized in the scientific papers (Bembenutty et al., 2016; Block et al., 2010; Eroglu & Unlu, 2015; Fisher, 2017; Jeong & Block, 2011; Martin & Kulinna, 2004; Klassen & Tze, 2014; Tschannen-Moran & McMaster, 2009; Tschannen-Moran et al., 1998). Bandura (2007) emphasizes the social aspect of the environment such as the classroom environment, teacher, and peers. Bembenutty et al. (2016) presented a model that depicts how students are influenced by their peers and their teachers through observational learning as well as social persuasions (Figure 7).



Figure 7. Triadic model in a class context (Source: Bembenutty et al., 2016)

The concept of self-efficacy in the organizational psychology is termed as professional self-efficacy and perceived as trust in managing events and behaviour related to professional activity and life (Fisher, 2017). In his research, Fisher (2017) presents two aspects of the self-efficacy term - self-efficacy of the profession and self-efficacy of the professional - which explain that individual teachers perceive themselves as good professionals when they believe in their individual ability to make a difference and influence their students' future. Based on these two aspects of self-efficacy, SE as an indicator can predict not only how the teacher believes in his/her knowledge and ability in the working environment, but also how SE beliefs can affect his/her environment, for example, students. This is particularly important in creating an inclusive environment in the classroom, where it is important not only to influence students' academic achievements, motivation, attitudes towards the school (Bembenutty et al., 2016; Klassen & Tze, 2014), but also to develop positive attitudes towards the peers with different level skills. This means that a teacher with a high level of self-efficacy who will rely on his/her ability to convey knowledge to students with different abilities so that each one can develop and feel as an equal participant in the educational process. In this way, the educational environment of the school would create favourable conditions for the development of tolerance, respect, understanding, and other qualities that would form an environment based on inclusion. In the Social Cognitive Theory by Bandura (1986), "paragon" is described as the one who is used to changing attitudes and behaviours, as people not only learn by classical or operant conditioning processes, but also by models (Osswald, Frey, & Greitemeyer, 2009). Thus, the teacher, as a "paragon", plays an important role in developing the psychological climate in the classroom. Social Cognitive Theory can be used as a theoretical system that reveals the process of observational learning method. The observable learning is perceived as the fact that "observers can acquire cognitive skills and new patterns of behaviour by observing the performance of others" (Bandura, 1986, p. 49). Aiming that observed models (teachers) had a positive influence on children or students, the models must not only have authority, be reputable, influential and competent, but also be similar to children or students that observe them (Osswald et al., 2009). If the teacher is too demanding and a very perfect personality, the students who will try to model him/her will have too many difficulties to follow him/her and observe his/her behaviour and it is likely that those children will be frustrated (Osswald et al., 2009). Therefore according to Bandura (1986) "special type of observational learning" is useful when it are seen as "abstract modelling", on the basis of which the skills and general rules are assimilated through direct or symbolic observation of the teachers. It is also possible to learn abstract moral rules and ethical norms from "paragons" teachers (Osswald et al., 2009). Therefore the "paragon" teacher can be described as a directly strongly affecting, informative and motivating model and also as a subtle model who can significantly affect the students' cognition and behavioural processes.

At the beginning of the section it was observed that Bandura (1977, 1986) suggested SE beliefs to be acquired and modified through four primary sources of information: mastery experiences, vicarious experiences, verbal/social persuasion, and physiological states. The impact that these informational sources have on SE depends on a variety of factors, such as how the teacher/student attends to, interprets, and recalls them (Bandura, 1986). However, personal accomplishments such as successes or failure also have the potential to exert the great influence on SE (Lent & Hackett, 2009). "The success of psychological interventions can be enhanced by arranging experiences designed to strengthen SE beliefs for specific behaviours in specific problematic and challenging situations (Maddux, 2009, p. 878). When the teachers/students see themselves coping effectively with difficult situations, their sense of mastery is likely to be heightened (Maddux, 2009). The most powerful source of self-efficacy is mastery experience, defined as one's interpretations of one's own previous authentic experiences performing a particular task (Klassen & Tze, 2014). Developing a sense of efficacy through mastery experiences involves acquiring the cognitive, behavioural, and self-regulatory tools for creating and executing appropriate courses of action to manage ever-changing life circumstances (Bandura, 1995). Tschannnen-Moran and McMaster (2009) found that the professional development form that supported mastery experiences through follow-up coaching had the strongest effect on self-efficacy beliefs for reading instruction as well for implementation of the new strategy. The second source of SE is that of observing another person successfully performing the action that one is contemplating vicarious experience. As teaching lacks absolute measures of adequacy, teachers must appraise their capabilities in relation to the performance of others (Tschannen-Moran & Mcmaster, 2009). Based on Bandura (1997), the impact of modelling on beliefs in personal efficacy is strongly influenced by perceived similarity to the models, for example, if teachers see the models as very different from themselves, their beliefs of personal efficacy are not much influenced by the models' behaviour and the results it produces. Effective role models approach challenging activities as an opportunity to learn and develop their knowledge, skills and effectiveness, this is a good role models to demonstrate the development of skills, persistence and learning rather than the defensiveness and blaming that cause mistakes to recur and subsequent performance to decline (Heslin & Klehe, 2006). The verbal persuasion is the third way to educate personal self-efficacy, when the purpose is that the student successfully completed or continued the chosen activity. People who are persuaded verbally that they possess the capabilities to master given activities are likely to mobilize greater effort and sustain it than if they harbour self-doubts and dwell on personal deficiencies when problems arise (Bandura, 1995). For example, to the extent that persuasive boosts in perceived SE lead teachers to try hard enough to succeed, self-affirming beliefs promote development of skills and a sense of personal efficacy (Tschannen-Moran & Mcmaster, 2009). Successful efficacy builders structure situations for teachers in ways that bring success and avoid placing teachers in situations prematurely where they are likely to fail often, and they encourage teachers to measure their success in terms of self-improvement rather than by triumphs over others (Block et al., 2016; Hutzler & Barak, 2017; Kwon & Block, 2017; Taliaferro et al., 2015; Taliaferro & Pilkington Harris, 2014). Heslin and Klehe (2006) claim that if we want verbal encouragement to create a higher sense of self-efficacy, it is necessary that this verbal encouragement was followed by experience-based practice (direct or indirect experience). The fourth way of altering efficacy beliefs is to enhance physical status, reduce stress and negative emotional proclivities, and correct misinterpretations of bodily states (physiological states) (Bandura, 2006). Strong emotional reaction can provide cues to expected success or failure (Bandura, 1997). For example, the teachers interpret their stress reactions and tension as signs of vulnerability to poor performance (Bandura, 1995). "Strategies for controlling and reducing emotional arousal (specifically anxiety) while attempting new behaviours should enhance SE beliefs and increase the likelihood of successful implementation" (Maddux, 2009, p. 879). Social interaction and positive interactions with others are thought to promote better mental and physical health by fostering the development of meaningful social roles, self-worth and self-efficacy (Maddux, 2009). Each mode of influence (mastery experience, vicarious experience, verbal persuasion, physiological states) is associated with a particular set of factors that have diagnostic significance in the self-appraisal of personal efficacy. For example, the extent to which performance attainments alter perceived efficacy will depend on teachers' preconceptions of their capabilities, the perceived difficulty of the tasks, the amount of effort they expended, their physical and emotional state at the time, the amount of external aid they received, and the situational circumstances under which they performed (Bandura, 1995).

Based on the Self-Efficacy Theory and the Social Cognitive Theory, the concept of self-efficacy plays an important role in achieving not only better personal development, but also better professional development. The level of self-efficacy is affected by such sources as practical experience, indirect experience, social promotion and perception of physiological - emotional state. Although practical experience has one of the strongest effects in shaping a person's self-efficacy, the effective development of a teacher's self-efficacy requires the inclusion of as many of these sources as possible. This chapter has revealed that self-efficacy is one of the most significant indicators that reveals teachers' perceived competence in educating students and has a significant impact on the psychological climate in the classroom. The next chapter will aim to reveal the benefits of physical education teacher to include pupils with disabilities in a regular physical education class, and discuss the means to explore this indicator.

1.5. Physical education teachers' self-efficacy for including students with special educational needs to the regular physical education classes

Physical education is considered an important vehicle for the promotion of physical activity, psychosocial development, and teaching dance, games, and sports skills. Unfortunately, children with SEN are often inactive and socially isolated during PE despite laws requiring children with SEN to be included in general educational schools, PE not excepted (Martin, 2014).

MacAllister's (2013) analysis of Andrew Reid, Richard Peters and Aristotle's Philosophy on Physical Education revealed that curricular physical activity is a meaningful activity, which has a significant influence on the formation of a person's and society's culture. Reid (1997) states that physical education includes various activities that develop moral, aesthetic, life, political, religious and cognitive values. Values usually help a person not only to orient themselves in life, but also to choose what is really meaningful to them. The foundation of value education is morality; it is the highest humanity criterion and the basic form of sociability education (Aramavičiūtė, 2010). The system of moral values is closely linked to sociability, including values such as honesty, justice, legitimacy, tolerance and homeland love, as it combines the prerequisites for the development of a person that promotes empathy, solidarity, as a condition of peace and freedom, which manifests through the goodness and the understanding of others, mercy, forgiveness, love to the beloved ones, dignity, and self-esteem (Aramavičiūtė & Martišauskienė, 2009). In educating these values, the school plays a special role the teachers who shape people's democratic thinking, consciousness, and lifestyle (Berns, 2009). MacAllister (2013) referring to Aristotle's philosophy predicate, that PE is one of the main four disciplines (reading and writing, physical training, music, and drawing) that makes a significant contribution to the development of a healthy and dirigible personality. Therefore, it is stated that one of the most conducive environments for implementing inclusive attitude is physical education class (André et al., 2011; Grenier et al., 2005; Hutzler, 2003; Hutzler, 2007; Klavina et al., 2014; Polvi & Telama, 2000; Qi et al., 2016; Tubić & Đorđić, 2012) and physical education teacher plays the key role in educating the values needed to create an inclusive environment (Navarro et al., 2016).

In the analysis of studies related to the field of inclusive education, it has been found that in creating an inclusive environment for students with SEN in a regular class, psychological indicators such as teacher's attitude and self-efficacy play a significant role (Dukmak, 2013; Engstrand Zakirova & Roll-Pettersson, 2012; Hofman & Kilimo, 2014; Humphrey & Symes, 2013; Sarı, Çeliköz, & Seçer, 2009; Sharma, Shaukat, & Furlonger, 2014; Shaukat, Sharma, & Furlonger, 2013; Urton, Wilbert, & Hennemann, 2014; Vaz, Wilson, Falkmer, Sim, Scott, Cordier, & Falkmer, 2015; Hernandez et al., 2016). There are also a lot of studies made to find out the attitudes of PE teachers (Campos, Ferreira, & Block, 2014; Hutzler, 2003; Jerlinder et al., 2010; Karani & Skordilis, 2016; Kudláček, 2007; Mauerberg-deCastro et al., 2010; Block et al., 2013; Block et al., 2016; Beamer & Yun, 2014; Block et al., 2010; Block et al., 2013; Block et al., 2016; Kudláček, 2017; Hutzler, Zacha, & Gafni, 2005; Jovanović et al., 2014; Kudláček et al., 2018; Kwon & Block, 2017; Li et al., 2018; Morgan, 2013; Reina et al., 2016; Taliaferro & Pilkington Harris, 2014; Taliaferro et al., 2015;

Taliaferro, 2010; Tekidou, et al., 2015; Tindall et al., 2016) towards inclusion of students with SEN in regular physical education classes.

Analysis of literature revealed that self-efficacy of PE teachers towards inclusion of students with SEN is gaining more importance than attitudes in creating an inclusive learning environment in PE classes. Individual studies have found that teachers' SE is one of the strongest predictors of their attitudes towards inclusion (Ilić-Stošović et al., 2015; Karani & Skordilis, 2016; Vaz et al., 2015). Stajkovic and Luthans' (1998) meta-analytical findings support a highly significant positive correlation between SE and work-related performance. Yada and Savolainen (2017) conclude that one way of changing teachers' attitudes is to improve their SE for inclusive practices and the results of their study indicate that more attention should be paid to teachers' lack of confidence regarding the inclusive practice. Fisher's (2017) study confirms the theoretical model's relationship between teacher perceptions of SE and teacher attitudes towards inclusion.

Creating inclusive environment in PE classes, PE teachers not only have to transfer knowledge, but also to adapt it to students who have skills of different levels (Block et al., 2010; Griggs & Medcalf, 2015; Qi & Ha, 2012). Teachers accepting the diversity of students are able to make flexible decisions and to transfer ideas about natural differences between people possessing the same values (Galkienė, 2016; Griggs & Medcalf, 2015; Klavina et al., 2014; Ko & Boswell, 2013). In an inclusive PE class the PE teacher has to create a learning environment where every student feels that he/she is a full participant in the teaching and learning process (Block et al., 2010; Griggs & Medcalf, 2015; Karani & Skordilis, 2016). The PE teacher has to create an environment for all, where personal weaknesses and disadvantages are not highlighted, where a student feels safe and as an equally important member of the community, and where in certain situations measures are taken to turn personal weaknesses and disadvantages into benefits and advantages (Booth & Ainscow, 2011; Ko & Boswell, 2013). This all can be achieved only by a PE teacher who is confident and who relies on the knowledge and its practical application at work (Block et al., 2010; Griggs & Medcalf, 2015). In order to create such an environment, the PE teacher must both have knowledge and also the confidence in her or his skills and in the capability to apply this knowledge in various specific situations (Block et al., 2010; Block et al., 2013; Griggs & Medcalf, 2015). The way the teacher adapts the task, modifies the goal, applies educational methods and handles difficult situations depends on his or her level of situation and task-specific confidence. The teachers' SE is their confidence and beliefs in being able to cater to the varied needs of all students in an inclusive school setting (Block et al., 2010; Karani & Skordilis, 2016). Based on the teacher self-efficacy strength, it is possible to identify how the teacher will understand the possibilities of the surrounding environment and how they will create an education environment in a lesson and how long and persistently they will continue their activities when they encounter with challenges (Bandura, 2006). A meta-analysis by Klassen and Tze (2014), consisting of 43 studies representing 9216 participants, demonstrated that teachers' perceived SE was related to increased persistence in working with challenging students; SE was shown to influence teachers' instructional practices, enthusiasm, commitment and teaching behaviours.

The studies reveal that such factors like support from others (APE specialist, teacher assistant), knowledge in adapted physical education, and teacher training in inclusive practices has a positive influence on creating PE teachers' self-efficacy while creating inclusive environment for students with SEN (Baloun et al., 2016; Beamer & Yun, 2014; Block et al., 2013; Hutzler & Barak, 2017; Hutzler, 2003; Jerlinder et al., 2010; Karani & Skordilis, 2016; Kwon & Block, 2017; Martin, 2014; Mauerberg-deCastro et al., 2013; Reina et al., 2016; Taliaferro, 2010). This also has a positive impact on the academic and social success of students with SEN (Hernandez et al., 2016). Jovanović et al. (2014) found that self-efficacy of PE teachers was affected by the type of disability and gender. This means that PE teachers had higher self-efficacy level working with students with intellectual and physical disabilities rather than working with students with visual impairments. Females had higher self-efficacy then males. Jovanović et al. (2014) revealed that the level of self-efficacy to include children with disabilities of PE students from different universities differed statistically significantly. The results of this study showed that it is important to review the curriculum for physical education teachers and to clarify the strengths and weaknesses of PE teacher training programs. Analysing the studies that examined the SE beliefs of students working with SEN in the field of physical education, it was found that PE teachers who had the experience of including SEN students had a higher self-efficacy level than those PE teachers who did not have such experience (Reina et al., 2016). Beamer and Yun (2014) found that PE teachers' experience, graduate coursework in APE, and perceptions of strength of undergraduate training in APE significantly predicted their self-efficacy and their self-reported behaviour for including students with autism spectrum disorder (ASD). According to a study by Beamer and Yun (2014), self-efficacy is closely related with behaviour, which is why it is very important to investigate the relationship between SE and teaching behaviour. While research (Armitage & Conner, 2001; Martin & Kulina, 2004; Wang & Ha, 2013) suggests that SE beliefs are directly linked to professional preparation, however there are not many studies (Beamer & Yun, 2014; Taliaferro, 2010) exploring the relationship between SE beliefs, challenges, and behaviours of PE teachers in inclusion of students with disabilities in physical education. These results can help identify methods to improve SE and positive teaching behaviours of physical educators towards students with SEN and could potentially guide future physical education teacher education and professional development programming. According to Bandura (1997), SE beliefs are effective predictors of behaviour. Armitage and Conner's (2001) meta-analysis showed that SE accounted for most additional variance in intention, and both perceived behavioural control and SE accounted for equivalent proportions of variance in behaviour. The implication is that individuals have intentions that they are confident with and they can implement (those they perceive as SE), and that translation of intention into action may be facilitated both by SE and assessment of more external factors tapped by perceived behavioural control (Armitage & Conner, 2001). Taliaferro (2010) found that PE teachers' SE belief in including a student with ASD is a strong predictor on self-reported inclusion behaviour. Bandura (1997) proposed that SE beliefs are associated with the degree of challenge that exists in the context of a task. The people who have high levels of SE are more likely to view difficult tasks as a challenge to be overcome rather than avoided, and they are more likely to put forth more effort and persist longer in these tasks and are more likely to successfully perform the activity than are people with low SE (Bandura, 1977). As it pertains to teaching students with SEN, physical educators with low SE view students with SEN as a threat instead of a challenge for their professional performance (Hutzler et al., 2005).

The analysis of research carried out has revealed that studies conducted in this research area contribute significantly not only explaining the prevailing situation of PE teachers' self-efficacy level when including students with SEN, but also accelerate the development of the whole process of inclusion (Healy, 2015; Kwon & Block, 2017; Kwon, 2014; Sato & Haegele, 2017; Sierra, Garcia–Gómez, Hemmelmayr, Fernández–Pacheco, & Reina, 2016; Taliaferro & Pilkington Harris, 2014; Taliaferro et al., 2015). Looking into Lithuania's perspective, it has been

observed that this field of research has not yet been explored; therefore, it is necessary to investigate and reveal how Lithuanian physical education teachers feel ready to include students with SEN in the regular physical education classes. Appropriate tools are needed to achieve this. In the studies based on the analysis of self-efficacy for the inclusion of students with SEN in the regular PE classes, we found that the following instruments were used to assess the self-efficacy score in these studies:

• Self-efficacy in teaching PE under inclusive conditions (SEIPE). This instrument was used in one of the first studies about PE teachers' self-efficacy towards inclusion by Hutzler et al. (2005); it was self-developed based on instructions for constructing self-efficacy questionnaires (Bandura, 1997). It includes 15 items containing short vignettes, with a question about the respondents' confidence in their ability to provide the child with disability and his/her peers with optimal learning conditions;

• Physical Educators' Self-Efficacy towards Including Students with Disabilities – Autism (PESEISD-A; Taliaferro, Block, Harris, & Krauske, 2011). This instrument consists of a self-efficacy scale and six other scales which are connected with questions of that scale (mastery experience, vicarious experience, social persuasion, behaviour, physiological state and perceived challenges); this instrument not only allows to identify PE teachers' SE towards including students with ASD, but also to better understand the problems that cause the biggest difficulties for PE teachers to include students with ASD in a mainstream PE class, and understand the factors that influence their SE. This instrument was used by Beamer and Yun (2014), Li et al. (2018); Morgan (2013); Taliaferro (2010), Taliaferro & Pilkington Harris (2014), in their studies;

• Self-Efficacy Scale for Physical Education Teacher Education Majors towards Children with Disabilities (SE-PETE-D; Block et al., 2013). This instrument consists of three self-efficacy scales (intellectual disability, physical disability, and visual impairment) and was developed as situation- and disabilityspecific, and therefore may be useful for a variety of disability conditions and situations encountered during PE; the SE-PETE-D has been adopted by both European and American scholars (Baloun et al., 2016; Eden & Hutzler, 2015; Hutzler & Barak, 2017; Jovanović et al., 2014; Kudláček et al., 2018; Kwon & Block, 2017; Reina et al., 2016; Taliaferro et al., 2015; Tekidou et al., 2015; Tindall et al., 2016). When discussing the importance of physical education classes to uphold the principles of inclusive education and the role of a physical education teacher in creating an inclusive learning environment for children with disabilities in a regular physical education class, there is a natural need to examine the nondisabled students' attitudes towards participation of peers with disabilities in physical education. The following section will aim to reveal the benefits of inclusive physical education lessons for non-disabled students, their prevailing attitudes towards participation of their peers with disabilities in physical education lessons, and to discuss instruments that allow studying students' attitudes towards inclusion of students with disabilities in general physical education.

1.6. Attitudes of students towards the participation of peers with special educational needs in a common physical education class

Attitude is defined as individual's positive or negative feeling associated with performing a specific behaviour (Ajzen, 1991). Attitudes are thoughts, feelings, specific mood to respond positively or negatively towards individuals, things or situations (Berns, 2009). An attitude can be looked at as an enduring set of emotionally charged beliefs that predispose a person to certain kinds of behaviours (Sherrill, 1998). "An attitude is an idea charged with emotions which predispose a class of actions to a particular class of social situations" (Triandis, 1971, p. 2). As related to inclusion of students with SEN, McKay, Haegele, and Block (2018) defined it as the cognitive component which involves statements related to knowledge about classmates with SEN, the affective component which involves statements about feelings towards students with SEN, and the behavioural component which involves statements about actual or intended behaviour towards individuals with SEN. Participants indicated paradigm shifts through cognition, feelings, and intended behaviours, representing a multidimensional attitude change. Students' attitudes towards the inclusion of students with SEN in general class activities can be described as thoughts and feelings of the child, which justify the perception of a classmate with SEN and his/her participation in joint activities. Therefore, the student's provisions include convictions, feelings and behaviours including students with SEN in a regular PE class. Thus, from a student's point of view towards students with SEN, one can guess how he/she will react and behave

in an inclusive physical education class. Ajzen (1991) suggests that an individual will hold a favourable attitude towards a given behaviour if he/she believes that this behaviour will lead to positive outcomes. Attitudes, like values, are learned from socialization actors, which are the role models, and direct experiences (Berns, 2009). Keeping an eye on the surroundings and observing, children create their own attitudes towards the environment. According to Bandura's (1986) Social Cognitive Theory, children's attitudes are shaped by their pursuit of attractive and respectful models. Thus, the inevitably shaping the attitudes of students is greatly influenced by the family, friends, media, and school environment (Berns, 2009).

Research on the impact of classmates on the inclusion of children with SEN in the overall activity of the classroom showed that classmates' attitudes have a significant impact on the success of the inclusion of children with SEN (Arampatzi, Mouratidou, Evaggelinou, Koidou, & Barkoukis, 2011; Cairns & McClatckey, 2013; Chuchu, T. & Chuchu, V., 2016; Hamid, Alasmari, & Eldood, 2015; Kalambouka, Farrell, Dyson, 2007; Obrusníková, Válková, & Block, 2003; Olaleye, A., Ogundele, Deji, Ajayi, Olaleye, O., Adeyanju, 2012; Prince & Hadwin, 2013; Seymour, Reid, & Bloom, 2009; Shields & Synnot, 2016). Bebetsos, Derri, Zafeiriadis, and Kyrgiridis (2013) found that students' without SEN attitudes were proved to be powerful in predicting their behaviour towards their peers with SEN in the physical education class. An analysis by Ruijs and Peetsma (2009) has shown that inclusion has a positive impact not only on students with SEN, but also on students who are not identified as having special educational needs. The interaction between students with different abilities in an inclusive educational environment creates conditions for tolerance, friendship, understanding, respect, caring, sincerity, helpfulness, and other moral characteristics (Peplak, Song, Colasante, & Malti, 2017). The inclusive environment creates conditions for the formation of a positive attitude towards the person's exceptional abilities, exceptional appearance, behaviour, recognizing it as a person's uniqueness, and not as a deficiency. Physical education classes are one of the most favourable educational environments for modelling these students' moral qualities (Obrusnikova & Dillon, 2012; Orlić, Pejčić, Lazarević, & Milanović, 2016; Smith & Thomas, 2006). The class of physical education through contact games creates favourable conditions for individuals to know each other, to learn, to discover, to face creative challenges, to develop tolerance and friendship (Klavina et al., 2014; Lu & Buchanan, 2014; Seymour et al., 2009). It forms their attitudes not only as a student but also as a future specialist (teacher, doctor, architect, etc.) towards social inclusion of persons with disabilities, disorders, and learning difficulties. In reviewing the research on students' attitudes, the inclusion of students with SEN in the regular PE classes, it was found that the more frequent interaction of students with students with SEN (Arampatzi et al, 2011; Kudláček et al., 2011; Obrusníková et al. 2003; Seymour et al., 2009) and personal experience with persons with disabilities (family member, friend) had a positive impact on their attitudes towards the inclusion of these students (Block, 1995). Studies have also shown that girls are more positive about including their classmates with SEN in regular PE classes than boys (Bebetsos, Derri, Filippoua, Zetoua, &Vernadakisa, 2014; Block, 1995; Campos et al., 2013; Cordente-Mesas et al., 2016; Liu, Kudláček, & Ješina, 2010; Obrusníková & Dillon, 2012), and that students are more favourably involved in the inclusion of classmates with SEN in the physical education class than in the participation of these students in sports games (Block, 1995). The difference in students' perceptions between the general attitudes to inclusion and the attitudes to including students with SEN in sports games is explained by the level of competitiveness, that is, children who like to win, but it is OK if they lose sometimes and no matter whether they win or lose, they like the game itself are more positive towards participation of students with SEN in joint games than those who like to win, and are very upset if lose (Block, 1995; McKay, 2013; Van Biesen, Busciglio, & Vanlandewick, 2006). Hutzler and Levi (2008) found no difference in the attitudes between students who participated in sports classes and those who did not, and that students who had previous exposure to students with disability exhibited reduced willingness towards including them in physical education classes. Arampatzi et al. (2011) found that gender was a significant factor just for students displaying aggression but not social insecurity and/or adopting positive attitudes towards disability. Bebetsos et al. (2013) study revealed that students' specific training could improve their general attitudes and consequently generate more positive general and modified behaviours towards their peers; and the enhancement of teachers' knowledge and skills on the subject of inclusion in physical education in general and on attitudes and behaviours in specific could further assist the above mentioned endeavour and produce the desirable outcomes for all students.

Based on the importance of the approach to creating an inclusive environment for students with SEN in physical education classes in Europe and the US, Paralympic school days (PSD) (Liu et al., 2010; McKay et al., 2018; McKay, 2013; McKay, Block, & Park, 2015; Panagiotou, Kudláček, & Evaggelinou, 2006; Van Biesen et al., 2006; Xafopoulos, Kudláček, & Evaggelinou, 2009), a summer camp (Papaioannou, Evaggelinou & Block, 2014) and their effect on the students' attitude towards the inclusion of peers with disabilities were studied. Using PSD to expand perceptions and development of a culture where individuals of all abilities are appreciated enhances much needed respect for human differences and diversity in the school setting (McKay et al., 2018). The scientists from Belgium Van Biesen et al. (2006) conducted the study and found that PSD had a significant positive effect on the attitudes of students in two schools, but in one school the attitudes after PSD changed negatively, however, the results were not significant. This study also revealed that girls with a low level of competitiveness had more positive attitudes than boys with a high level of competitiveness. In the research conducted by Panagiotou et al. (2006), the PSD programme was applied for the students from non-inclusive schools and inclusive schools. The results indicated significant differences between groups of students from inclusive and non-inclusive schools. These differences concerned only general attitudes about disabilities and not specific sports-related questions. Panagiotou et al. (2006) stated that multifarious curricula might improve general attitudes of children from non-inclusive schools, and that more specialized curricula were needed to improve general attitudes of children from inclusive schools and sport-specific attitudes of all children. Xafopoulos et al. (2009) applied PSD programme for students from the United Kingdom, Canada, US, Korea, and Czech Republic in an International school and found significant differences only in general attitudes among girls. In the Czech Republic, the results of the research conducted by Liu et al. (2010) revealed positive attitudes towards the inclusion of students with disabilities in the PE classes after the Paralympic school day, while attitudes towards changing sports rules for students with a disability worsened, however, these changes were not statistically significant. Papaioannou et al. (2014) aimed at examining the impact of three-week Disability Camp Program on the attitudes of children without disabilities towards the inclusion of hypothetical peers with physical disabilities in a summer sports and leisure activity camp. Summer camps are recreational settings, in which children have the opportunity to participate in activities and games with peers on daily basis, which foster inclusion and develop close relationships. This study shows that participation in this particular Disability Camp

Program can have a positive effect on children's attitudes towards the inclusion of children with disabilities in summer sports and leisure activity camp.

The scientists from US McKay et al. (2018) conducted a qualitative study, the aim of which was to understand and describe the experiences of sixth grade students, taking part in the ongoing PSD programme in relation to shaping attitudes and perceptions of disability and disability sport. The results of this study showed that Paralympic school day treatment had a positive influence on the students' attitudes towards the inclusion of students with disabilities in PE class. The analysis of the research results revealed three interrelated themes: "just like the rest of us" (p. 7), "what it means to be normal" (p. 8), and "PSD changed my view of disabled people" (p. 9) (McKay et al., 2018). Within the reflections of the participants, phrases such as "there is no normal" (p. 12) and "normal doesn't exist" (p. 12), which support an "everyone is different, everyone is normal" (p. 12) discourse, were constant (McKay et al., 2018). "Reflections related to "normal" clearly depicted the PSD intervention, including the experience of intergroup contact, as having a positive impact on newly formed perceptions" (p. 12), i.e. students viewed individuals with disabilities as equal in status to themselves, not superior or inferior in status (McKay et al., 2018).

The reviewed studies show that the students' attitudes towards the inclusion of class members with SEN in the physical education classes contribute significantly to the implementation of inclusive provisions in the educational process, but also to the broader perception of disability and wider opportunities for the socialization of people with disabilities.

Analysing research conducted by European and US researchers, it has been observed that many studies have been conducted using a unified approach of students to the inclusion of students with SEN in the curriculum for physical education. Analysis of the scientific literature revealed the use of such research tools as Children's Attitudes Towards Integrated Physical Education – Revised (CAIPE-R; Block, 1995), Attitudes Towards Including Students with Disability in Physical Education (ATISD-PE; Hutzler & Levi, 2008), and the Children's Beliefs and Intentions to Play with Peers with Disabilities in Middle School Physical Education (CBIPPD-MPE; Obrusnikova, Dillon, Block, & Davis, 2012) separately or there were different combinations of those tools together with the other ones such as a revised version of the Planned Behaviour Theory (PBT) questionnaire, the Adjective Checklist (Siperstein, 1980), modified version of the Attitudes Towards Integrated Sports Inventory (ATISI; Block & Molloy, 1998), the Checklist of Aggressive Behaviour (CAB; by Peterman & Peterman, 2001), the Checklist of Social Insecure Behaviour (CSIB; by Peterman & Peterman, 2003). One of the most commonly used tools in these studies was Children's Attitudes Towards Integrated Physical Education – Revised (CAIPE-R) Instrument created by Block (1995) (Arampatzi et al., 2011; Bebetsos et al., 2013; Bebetsos et al., 2014; Campos et al., 2013; Cordente-Mesas et al., 2016; Hutzler & Levi, 2008; Kudláček et al., 2011; Liu et al., 2010; McKay et al., 2015; McKay, 2013; Obrusníková et al., 2003; Panagiotou et al., 2006; Papaioannou et al., 2014; Van Biesen et al., 2006; Xafopoulos et al., 2009).

After reviewing the importance of inclusive education and the possibilities for developing this process in a physical education class, the following section will explore ways to develop the self-efficacy of physical education teachers to create an inclusive learning environment for students with special educational needs caused by disabilities.

1.7. The ways for development of the self-efficacy of physical education teachers to create an inclusive educational environment for students with special educational needs in a regular physical education class

An overview of the research results and conclusions in the last two chapters shows that the necessity to develop, improve and evaluate strategies that would develop the self-efficacy of physical education teachers to create an inclusive educational environment and form positive attitudes of students towards the inclusion of their peers with SEN in the regular physical education class is evident. A small number of scientific publications have been found in the research (Kwon & Block, 2017; Sato & Haegele, 2017; Sierra et al., 2016; Taliaferro & Pilkington Harris, 2014; Taliaferro et al., 2015; Tindall et al., 2016) and dissertations (Healy, 2015; Kwon, 2014) discussing the issue of strategy-making teachers in the field of physical education or the ability to create an inclusive learning environment for students with SEN in a regular physical education class. These studies reveal a one-day workshop (Taliaferro & Pilkington Harris, 2014), implementing the adapted physical education e-learning one-week supplement (Kwon, 2014; Kwon & Block,

2017); impact of online professional development on physical educators' knowledge and implementation of peer tutoring (Healy, 2015), three-week training program for inclusive physical education (Sierra et al., 2016), and adapted physical education course with an associated on-campus practicum (Taliaferro et al., 2015) to teachers' preparation to work in inclusive physical activity environments and self-efficacy beliefs in the inclusion of individuals with special educational needs. Tindall et al. (2016) aimed at examining the effects of a 10-week adapted physical activity programme on the self-efficacy levels of pre-service teachers towards teaching children and young people with disabilities during a weekly 1-hour APA programme. A qualitative study by Sato and Haegele (2017) revealed the effectiveness of the online APE course and ensured significant improvements in this course.

Taliaferro and Pilkington Harris (2014) investigated the effects of a one-day (approximately six hours) workshop on general physical educators' self-efficacy to include students with autism spectrum disorder into the general physical education setting. The workshop provided educational information about working with students with autism, including strategies and ideas for including students with autism into the general PE setting, getting to know the students, communicating with parents and caregivers, creating individualized education plans, adapting equipment, modifying instruction, developing appropriate activities, ensuring student safety, and dealing with behavioural issues. During the workshop, general physical educators were given a PowerPoint presentation including ideas and strategies for including students with autism into the general PE classroom setting. Several video examples were presented to show students with autism and other disabilities successfully included in general PE (vicarious experiences). Participants were able to ask questions about any disability he/she may have difficulty including into the general PE. A practical session of approximately two hours in the morning allowed participants to practice modifying equipment, modifying activities and games, and modifying instruction (i.e., mastery experiences), and watch how a trained adapted physical educator would conduct a class that included a child with autism spectrum disorder (i.e., vicarious experiences). Participants were encouraged to provide examples of their own experiences in modifying activities and instructions to accommodate children with autism in general physical education. Also participants were presented information on positive behavioural support for children who display challenging behaviours, and then small groups were formed allowing participants to work together to create a functional behaviour plan (Taliaferro & Pilkington Harris, 2014). Results indicated that a one-day workshop did not have a statistically significant impact on physical educators' self-efficacy beliefs in inclusion, but made the significant positive influence on teachers' self-efficacy feeling.

The scientists Taliaferro et al. (2015) evaluated the effect of completion of an APE course with an associated on-campus practicum on pre-service physical educators' self-efficacy beliefs towards the inclusion of individuals with special educational needs (autism spectrum disorder, intellectual disabilities, physical disabilities, and visual impairments). All participants were enrolled in one of two 15-week APE courses with an associated during-class practicum that are required in the undergraduate Physical Education Teacher Education program of study. All participants in Course 2 had previously completed Course 1. Course 1 two-credit pre-major APE survey course lasted for 160 minutes per week and occurred typically in the second or third semester of the study. Content covered in this course focused primarily on information pertaining to characteristics of various disability categories and their implications for physical education programming, implementation, and evaluation. Course 2, a one-credit senior-level APE course, lasted 130 minutes per week. Course objectives were based on the planning, implementation, and adaptation of classes for students with disabilities and included managing a teaching environment to meet the needs of learners with varying abilities, managing staff and assistants, creating meaningful class plans with necessary adaptations, collaborating with special education staff, assessing student performance and progress, and reflecting on teaching experiences. All participants were involved in the same APE practicum experience working with individuals with disabilities. The experience consisted of a 9-week, 60-minute per-week oncampus practicum working with individuals with various disabilities (students). The practicum in this study was designed to target all four sources of self-efficacy: mastery experiences, social modelling, social persuasion, and psychological responses (Bandura, 1977). The results of the study revealed that Course 1 and Course 2 made statistically significant influence on self-efficacy beliefs.

The aim of Kwon's (2014) study was to explore if an APE e-learning and traditional printed supplements in Physical education teacher education courses would have an impact on the self-efficacy and content knowledge of pre-service PE teachers related to including students with intellectual disability (ID) in their team sports classes. An APE supplement was developed based on the Instructional

Design Model (Dick, Carey, & Carey, 2005) to provide three sources of selfefficacy, mastery experience, vicarious experience, and social persuasions. The online supplement included written information, videos showing how to make accommodations, and an online discussion that allowed participants to share information with each other. The content of the supplement covered these subareas with results as follows: instructional strategies, (20%) equipment modification, (20%) rule modification (20%), environmental modification (15%), characteristics of ID (13%), and basic information of ID (12%). Three groups of pre-service teachers took the same content supplement with different delivery system, Elearning group with online, traditional group with printed handout, and control group without supplement. Results indicated that pre-service teachers' perceived self-efficacy (p = .023) improved after taking the e-learning supplement, however, there was no significant difference in the level of content knowledge (p = .248). A modified Post-Study System Usability Questionnaire was employed to measure the level of satisfaction towards the supplement, which results indicated that the elearning group showed significantly higher satisfaction levels than the traditional group did in usability and content quality.

Results of the dissertation ("The Impact of Online Professional Development on Physical Educators' Knowledge and Implementation of Peer Tutoring" by Healy (2015)) support the research results of Kwon and Block (2017). Healy's (2015) study revealed the positive influence of an online professional development course aimed at preparing practicing physical educators for the development and implementation of a peer-tutoring program in their physical education classes. Results revealed that participation in an online professional development course resulted in a significant increase in knowledge compared to the peer control group that did not complete the online professional development course; participation in an online professional development course helped 22% of participants to implement peer tutoring preparation programs compared to the controls. They actually implemented a peer tutoring program in one of their classes, 47% of participants completed some of the peer tutoring activities, and physical educators perceived the online environment as a positive setting for professional development (Healy, 2015).

Sierra and colleagues (2016) conducted an investigation in which they evaluated the effect of "Incluye-T: Training program for an inclusive physical education" on PE teachers self-efficacy beliefs towards the inclusion of individuals with intellectual disabilities, physical disabilities, and visual impairments. This

program lasted for three weeks (18 hours); the classes were carried out twice a week, each class lasted for three hours. The program consisted of theoretical and practical classes, covering topics such as hearing and visual impairments, visual impairments and intellectual disability, physical disability games and sports, and contact with a para-athlete. Results showed that the applied programme had a significant effect on PE teachers' self-efficacy beliefs towards inclusion.

Tindall et al. (2016) applied adapted physical activity (APA) programme which was based on the direct contact with children and young adults having various disabilities, and their pre-service teachers had to include such activities as dances, games, and health-related activities. Each teacher received a profile of their child prior to the commencement of the APA programme. This profile entailed a detailed account of disability as described by their parent or caregiver. At the end of each session, teachers were required to record how their children performed, marking any progress, physical difficulties with the planned activities or behavioural problems encountered. In order to estimate differences in teachers' self-efficacy, qualitative and quantitative methods were used. The results of study showed that APA programme had a significant impact on teachers' self-efficacy levels (it was proved using qualitative and quantitative methods).

Sato and Haegele (2017) carried out descriptive-qualitative study, the purpose of which was to investigate in-service PE teachers' engagement during an online APE practicum graduate course. The participants of the research were nine in-service PE teachers. The program included two online courses (Introduction to APE and Practicum in APE). Participants in this study were recruited from those enrolled in the program (16 weeks and two semesters) in 2014 and 2015. APE online graduate endorsement curriculum consisted of an introduction to the APE course and a practicum in APE courses. Introduction to the APE online course was designed to prepare physical education teachers to provide safe, appropriate and individualized accommodation to students with disabilities (journal research article reviews, case-study report, inclusion assessment, weekly bulletin board assignments, and grant-writing practices). Practicum in the APE course consisted of supervised and supervisory experiences in adapted physical education for all ages, including conceptual bases for assessment and individual task analysis (practicum profiles: school profile, hands-on experiences, peer teaching evaluation; assessment report, individualized education program writing practices, bulletin board, discussion assignments, e-book report, class plans and peer evaluation). The survey data and the participants' recommendations made it possible to determine the strengths and weaknesses of online courses and make important changes to make the course more effective.

The analysis of completed studies revealed that APE knowledge was basic for educating PE teachers' self-efficacy beliefs towards the inclusion of students with special educational needs and other competences needed for creating inclusive education environment in PE classes. Dissemination of knowledge and experiences needs to be woven throughout the program content to preserve the competencies of pre-service teachers towards working individuals with disabilities, and APE content should be conveyed through relevant crossover topics to retain acquired knowledge and signify the reality and importance of inclusion (Taliaferro et al., 2015). Block et al. (2016) state that still many studies continue to report that physical educators do not feel confident in their ability to accommodate students with special educational needs; therefore, the teacher education model inevitably needs to be changed. The results of a qualitative study by Ko and Boswell (2013) have shown that PE teachers' proper preparation for work in inclusive educational environments can provide coherent and connected learning opportunities across teachers' careers. An infusion approach via online supplements may be an effective way to help to prepare physical educators for inclusion better (Block et al., 2016; Healy, 2015; Kwon, 2014; Kwon & Block, 2017). Sato and Haegele's (2017) study results confirm that online learning can be as effective as face-to-face learning.

Based on the review of the literature, the next chapter will present the theoretical model of developing physical education teachers' self-efficacy to create an inclusive educational environment, the main elements of the theoretical model and the principles of their interaction will also be discussed.

1.8. Construction assumptions of the Theoretical model of developing physical education teachers' self-efficacy to create an inclusive educational environment

This section will discuss the elements of the chosen theoretical model on which the model of developing physical education teachers' self-efficacy to create an inclusive learning environment is build (Figure 8).

Self-Efficacy Theory. Based on Bandura's (1977) Self-efficacy Theory, it

was assumed that using self-efficacy sources such as master experience, vicarious experience, social/verbal persuasion, physiological states, physical education teachers' self-efficacy to work with students with SEN in a common physical education class can be effectively developed.

Master experience is one of the most powerful sources that has the strongest effect on the sense of self-efficacy (Bandura, 1986). The impact of this source depends on how successful the teacher is to accomplish the task of creating an inclusive learning environment, or how the teacher succeeded in creating an inclusive learning environment in the past (Lent & Hackett, 2009).

Vicarious experience. Such experience as the observation of other professionals working with children with SENs can have a strong influence on the sense of self-efficacy of a physical education teacher to create an inclusive learning environment for children with SEN and lead to a higher quality implementation of a physical education program (Block et al., 2010). Master experiences enhanced vicarious experiences are one of the most effective ways to develop a sense of self-efficacy (Tschannen-Moran & McMaster, 2009).

Social/verbal persuasion. Although direct and indirect experiences have one of the strongest effects in developing a sense of self-efficacy, but if teachers do not receive adequate feedback from others (for example from other teachers, school administrators, parents, students) about how they managed to involve children with special educational needs in sport or other physical activities, this may lead to a distorted teacher's feeling of self-efficacy (Lopez, 2009). The teacher can rely too much on their abilities to create an inclusive education environment, or do not trust their abilities and avoid engaging pupils with SEN in sports or other physical activities, even though they are doing well.

Physiological states. The emotional state of the teacher and the experienced sense about involvement of children with SEN can influence the sense of self-efficacy in creating an inclusive learning environment. This source is of particular importance when it comes to involving children with SEN in sports or other physical activities, or when the teacher makes a lot of effort and the desired result is not available as quickly as desired (Block et al., 2010).

Social Cognitive Theory. This theory of Bandura (1986) was used to understand and justify the behaviour of the teacher and the students as a result of the constant interaction between cognitive, environmental and behavioural factors. In the theoretical model, this theory was used to justify the assumptions that (1)

high-performance lecturers conveying knowledge related to inclusive education in physical education will positively affect the self-efficacy of physical education teachers in creating an inclusive learning environment, and (2) positively affected self-efficacy of physical education teachers will form positive attitudes of students towards participation of their peers with SEN in sports or other physical activities.

Adapted physical education field of knowledge about children with SEN, including their psychological and developmental characteristics, adaptation of activities and equipment, development of a safe environment, encouragement of collaboration with peers, behaviour management, evaluation of movement skills, explanations of the tasks, modification of game rules, motivation, planning and organizing of sports/physical activities, is one of the main fields of science that strengthens the sense of self-efficacy of physical education teachers in creating an inclusive learning environment for students with SEN caused by disability (Block et al., 2016).

Online adapted physical education course. Transferring knowledge remotely using information technologies is one of the most effective alternatives for providing knowledge to physical education teachers and thus contributing to the development of teachers' self-efficacy in creating an inclusive learning environment (Healy, 2015; Healy, Colombo-Dougovito, Judge, Kwon, Strehli, and Block, 2017; Sato & Haegele, 2017). The use of remote means for transferring knowledge involves the use of information sources such as footage, books, articles, and the provision of e-consultation with specialists of adapted physical education and other, when physical education teachers apply the knowledge acquired during the course in physical education class. This alternative of knowledge transfer is effective when there are no conditions for teachers to attend seminars or workshops that take place in a traditional way. This alternative knowledge transfer was used to justify the 18-hour online Adapted Physical Education course included in the theoretical model (18 h online APE course). In this course, the self-efficacy of physical education teachers has been influenced by sources such as vicarious experience, verbal persuasion and physiological states.

Contact adapted physical education course. Traditional acquisition of knowledge is based on the knowledge delivered through direct contact - one of the most effective and commonly used ways to develop the self-efficacy of physical education teachers to create an inclusive learning environment (Kwon, 2014). Teachers are provided with an immediate environment to discuss, develop and test

their knowledge with practitioners. The traditional way of conducting courses opens up opportunities for more widespread use of self-efficacy motivating resources – master experience, vicarious experience, social/verbal persuasion, and physiological states - to develop the self-efficacy of physical education teachers to create an inclusive learning environment. The traditional way of transferring knowledge has been used to justify the 40-hour contact adapted physical education course (40 h contact APE course) included in the theoretical model.

In this course, the self-efficacy of physical education teachers was influenced by sources such as master experiences (application of knowledge of applied physical activity in practice), vicarious experience (footage, books, articles), verbal persuasion (the teacher provided information on how they managed to accomplish the tasks and were stimulated to apply knowledge at work), and physiological states (during the courses, the emotional state of physical education teachers was monitored, they were constantly asked about their wellbeing, and practical knowledge was given about how to strengthen emotional state while working in inclusive education environment).

The self-efficacy of physical education teachers towards inclusion students with SEN is the element in the theoretical model which plays one of the most important roles in creating an inclusive learning environment. Based on Bandura's Social Cognitive Theory (1986), it was assumed that when developing physical education teachers' self-efficacy to include students with disabilities into the classroom, it is also possible to successfully shape and implement the values needed to develop the principles of inclusive education in physical education classes. In the theoretical model, the element of Children's attitudes towards inclusion of peers with SEN played a significant role not only as an indicator of the success of involving peers with disabilities in sport and other physical activities, but also it was used to evaluate the effectiveness of Adapted physical education programs which develop teachers' self-efficacy to create inclusive educational environments.

Inclusive learning environment in physical education classes. In the theoretical model, the creation of an inclusive learning environment is understood as the formation of a positive climate in an inclusive physical education class. Such psychological indicators as the self-efficacy of the teachers and students' attitudes were used to develop a positive climate for children with SEN (Lancaster, 2014; McGhie-Richmond et al., 2013). This element of the theoretical model is
understood as the result of the effect of applied programs (18 h online APE course and 40 h contact APE course) on the self-efficacy of physical education teachers and the students' attitudes towards inclusion of students with disabilities in physical education classes.

The following is a hypothetical principle of operation of the theoretical model of developing physical education teachers' self-efficacy to create an inclusive educational environment.

This model depicts two educational strategies for developing SE of physical education teachers to create an inclusive learning environment for students with SEN. Each of these strategies consists of knowledge-based lectures and practical sessions. The first strategy was based on 18 hours (8 sessions) of an Adapted Physical Education online course. This course, based on Self-efficacy theory, is influenced by three sources of self-efficacy: vicarious experiences, verbal persuasion, and physiological states. The second strategy was based on 40 hours of a contact course (8 practical and theoretical findings) of Adapted Physical Education, during which PE teachers' SE beliefs are exposed to mastery experiences, vicarious experiences, verbal persuasion, and physiological states. Both courses are conducted during the education process. In this way, teachers have the opportunity to gain additional experience by applying the theoretical and practical knowledge gained during the courses in their classes, and to solve the challenges faced in real situations with competent specialists (lecturers of theoretical and practical classes). Also, based on the theory of social cognition, PE teachers, applying their knowledge in PE classes, will affect students' attitudes towards the inclusion of students with SEN in general physical class activities. By implementing these strategies, we hypothesized that PE teachers' observations and their contacts with lecturers possessing high self-efficacy and positive attitudes towards inclusion of students with SEN would have a positive effect on their own self-efficacy. Also an increase in the self-efficacy beliefs of PE teachers would have a positive impact on the attitudes of students towards inclusion of their peers with SEN in the joint class activities, thus creating an inclusive learning environment for students with SEN in regular physical education classes.

The educational experiment will be based on a theoretical model of developing physical education teachers' self-efficacy to create an inclusive educational environment. It is assumed that after conducting exploratory research and the educational experiment, this model will be revised.



Figure 8. Theoretical model of developing physical education teachers' self-efficacy to create an inclusive educational environment

2. METHODOLOGY

2.1. Research design

The methodology of the research was based on the Self-Efficacy Theory (Bandura, 1977) and Social Recognition Theory (Bandura, 1986) which are grounded on ideas of humanistic philosophy. Based on these theories, empirical research design was made for the development of physical education teachers' self-efficacy to create an inclusive educational environment (Figure 9).

The following research methods were applied in the dissertation:

- Analysis of scientific literature;
- Documents analysis;

• Questionnaire survey: by e-mail (Web-based), and distributing personally (paper-based);

- Natural educational experiment (Kardelis, 2016);
- Statistical analysis for data processing.

The research design for implementing the study was approved by the Committee of Ethics of Social Sciences at the Lithuanian Sport University (No. SMTEK-09). Permission to conduct the research was obtained from education departments in municipalities and school directors. Also verbal (from physical education teachers and children) and written (from students' parents/caregivers) consent to participate in the study was received.

In the research, a balance was followed between the researcher's desire to obtain objective information and the protection of the subject data (Kardelis, 2016). These principles of ethics were followed during the study:

• Voluntary participation: the respondents were informed that they were voluntarily participating in the study, they could refuse to participate in the study and leave it at any time;

- equal respect;
- humanity;

• privacy: no sensitive and personal information about the subject was published anywhere; the opportunity to participate in the study by choosing the most suitable environment and time for the subject was given;

• providing detailed information about the investigations for the

parents/caregivers of the students;

• confidentiality: survey data and information about the subjects were known only to the principal investigator; only generalized survey data were publicized;

• securing anonymity: information that would threaten the identification of the subject was not disclosed.



Figure 9. Logical sequence of empirical research

2.2. Research organization

PE teachers' recruitment was conducted between years 2015–2017, using two modalities: (a) circulating the questionnaire by means of e-mail (Web-based), and (b) distributing a paper-based questionnaire. During this period, pilot studies, instrument validation studies, case studies, and experimental research were performed (Figure 10).



Figure 10. Stages of empirical research

Before each survey using the paper-based method, physical education teachers were introduced to the purpose of the questionnaire survey and the structure of the questionnaire. If there were any questions concerning filling in the questionnaire, PE teachers could consult with the researcher at any time. 40 min was given for filling in the questionnaire when the survey was conducted before the APE workshops. While filling in the questionnaire in schools, the time for the survey was not limited, but the completion still did not last more than 40 minutes. The survey of PE-teachers using the Web-based method was carried out by sending links (http://www.manoapklausa.lt/apklausa/779221827/, http://www.manoapklausa.lt/a pklausa/779328282/) or by sending a questionnaire in a word document format directly to PE teachers by e-mail. Before starting to complete the questionnaire, the subjects were introduced to the purpose of the survey and the questionnaire's

instruction manual, and each PE teacher could contact the researcher through the indicated contacts. The filling in of the questionnaire was limited to one time, but the completion time was not limited.

Student survey was conducted using paper-based questionnaires. Only those students who submitted written permission from parents to participate in the survey could participate in the survey. Students who had parental permission, but did not want to participate in it, had the right not to take part in the survey. The survey time was agreed with the school head so that educational process would not be disturbed. The survey was conducted through subject classes, except for physical education classes. During the survey, the class teacher could participate if the school head requested. The survey appying CAIPE-LT questionnaire lasted for 40 min. First of all the researcher shortly introduced the aim of the survey and the structure of the questionnaire. Then the questionnaires were distributed. The survey was started after making sure all participating students were ready to listen and understood how to mark the answers properly. Before responding to the statements, a description of the characteristics of the disabled child was read out loud and clearly. According to the recommendations of Block (1995), two pivotal questions were submitted before the main questions. Two statements ("I like to play basketball", "I like playing "Quadrate") were presented to determine whether students understood the directions and were cooperating. Next, the researcher read in turn several questions related to the description of a student with disability (questions were repeated as many times as all children marked the chosen option). Separate scales were read one after another. A 1 min break was made between the questionnaires, then the researcher briefly instructed the students how to fil in the next part of the questionnaire and prepared the answer sheets for the following survey. Demographic questions of the survey participants were given before all the scales. In order to avoid the identification of the person, the students were asked for the name of the imaginary peer with disability before reading the description. With the approval of the class teacher and the students, the names were used that would not lead to an identification of any student from the class or school.

The first stage of the research – Pilot study – conducted in 2015. The pilot study using the SE-PETE-D-LT Instrument was conducted at the Lithuanian Sports University before the 6-hour APE seminar for teachers of physical education using a paper-based questionnaire. The pilot study using PESEISD-A-LT was carried out in cooperation with the Lithuanian municipal education centres,

using the circulating questionnaire by means of e-mail (Web-based). The pilot study using the CAIPE-LT instrument was conducted at one of the Lithuanian general education schools with which the Lithuanian Sports University has a cooperation agreement. Written permission from the school head and parents was obtained to interview the students from 5-8th grades.

The second stage of the research – Validation study – conducted in 2015. The survey lasted three months. Studies for the validation of statements in SE-PETE-D-LT and PESEISD-A-LT instruments were conducted using a paper-based questionnaire. PE teachers were surveyed before the 6-hour APE seminar, during meetings with PE teachers in schools, using distributed paper-based questionnaires. The study of CAIPE-LT instrument validation was conducted also using paper-based questionnaires. Invitation letters to participate in the survey were sent to the Education Departments of 15 Lithuanian municipalities. Nine Education Departments of Lithuanian municipalities returned confirmation letters indicating their agreement for cooperation and for sending the survey information to the emails of general education schools in the department, encouraging the heads of the schools to give the permission to conduct the survey in their schools. During this phase of the study, the students from 8 general education schools from 5 municipalities were examined.

The third stage of the research – Situational research – conducted in 2016. The survey lasted 6 months. The studies to clarify the situation about physical education teachers' self-efficacy towards inclusion of students with disabilities were conducted using two modalities: (a) circulating the questionnaire by means of e-mail (Web-based), and (b) distributing a paper-based questionnaire. Invitation letters to participate in the survey were sent to the Education Departments of all Lithuanian municipalities (n = 60). Forty Education Departments of Lithuanian municipalities returned confirmation letters indicating their agreement for cooperation and for sending the survey information to the emails of PE teachers in the department, encouraging them to participate in the survey (circulating the questionnaire by means of e-mail). Another sample of PE teachers was investigated during meetings with PE teachers in schools, using a distributed, paper-based questionnaire.

The study of the situation about students' attitudes towards inclusion of peers with disabilities into PE classes was conducted using a paper-based questionnaire. After conducting a telephone survey of the principles of the schools

from 9 municipalities, the permission to conduct the study was obtained.

The fourth stage of the research– Educational experiment – conducted in 2017. The educational experiment was conducted under natural conditions. The following experimental requirements were taken into account in the experiment and in the formation of groups of experimental participants: two experimental and one control groups were formed. Random grouping into control and experimental groups, homogeneity of the groups in relation to the subject, pre-test, independent variable effect on dependent variable, post-test measures were taken for experimental groups.

Two experimental groups and one control group of PE teachers were formed to evaluate the direct effect of strategies on PE teachers' self-efficacy. Three groups of students that matched teacher groups were formulated to evaluate the indirect impact of educational strategies for teachers' self-efficacy beliefs on students' attitudes.

PE teachers' from Group I participated in an 18-hour online APE course, PE teachers' from Group II participated in a 40-hour contact APE course, and PE teachers from Control Group did not take any of the courses. Two intervention groups and one control group of students were formed to evaluate the indirect effect of strategies on the attitudes of students to classmates with disabilities attending the regular PE class. Group I consisted of students of PE teachers who took an 18-hour online APE course, Group II consisted of students of PE teachers who took a 40-hour contact APE course, and Control Group consisted of students of PE teachers who did not take any of the courses.

Three groups of PE teachers – Group I (18-hour course), Group II (40-hour course), and Control Group – were given the instrument SE-PETE-D-LT and PESEISD-A-LT two times (pre-intervention and post-intervention). PE teachers from Group I and PE teachers from the Control Group used a Web-based questionnaire and Group II PE teachers used a paper-based questionnaire.

Three groups of schoolchildren - Group I (18-hour course), Group II (40-hour course), and Control Group) were given the Lithuanian version of the instrument Children's Attitudes toward Integrated Physical Education – Revised (CAIPE-R; Block, 1995) twice (pre-intervention and post-intervention). Children answered the questions in the paper-based questionnaire. The children's survey was conducted based on the instrument author Block's (1995) recommendations: at first, the researcher explained the progress of the survey, then they were given

worksheets with numbered statements and multiple choice answers. The researcher read aloud the description of an imaginary situation about a child with respective disability and the children were asked to choose and mark the answer most appropriate to them.

The intervention lasted for 14 weeks from February through May 2017. PE teachers and students filled in post-intervention questionnaires during week 14 after the start of the intervention.

2.3. Participants

During this study period (2015–2017), 397 general education schools from 40 municipalities were included in research, and 883 physical education teachers as well as 1689 students were research participants.

Physical education teachers. According to the data of 2015–2016 of the Lithuanian Centre of Information Technologies in Education, there were 1645 PE teachers working in sixty municipalities. In total, 883 (53.68%) physical education teachers from 397 general education schools were investigated. Details of sample sizes at each stage of the study are given in Table 1. In a separate section, "Participants of the experiment", information is provided about PE Teachers' Groups. The participants of the survey received and signed an informed consent form prior to filling in the questionnaires. For sample data, we calculated the sample size based on the Paniotto formula with 95 percent probability.

	Sample size (<i>n</i>)				
Stage of study	SE-PETE-D-LT	PESEISD-A-LT			
Pilot study	75	43			
Reliability of instrument					
Cronbach's alfa	171	346			
Test-retest reliability	22	22			
Validity of instrument					
Exploratory factor analysis	171	346			
Confirmatory Factor Analysis	171	_			
Situation analysis	517	404			
Experiment	58	58			

Table 1. Sample sizes of physical education teachers for each stage of research

Students. Students' recruitment was conducted in 2015–2017 using a distributed paper-based questionnaire. The total number of 1689 students from 5th to 9th grades from 34 general education schools in nine municipalities was investigated. The data from the questionnaire for students participating in pilot studies was not included in other research data analyses. More detailed information on sample sizes at each stage of the study is given in Table 2. The separate section "Participants of the experiment" provides information about experimental groups of students. Before conducting questionnaire surveys with students, written permission from the schools for conducting surveys in schools and written permissions of the parents concerning their child's participation in the survey were provided. Each child was also asked for agreement to participate in the survey before it. For sample data, we calculated the sample size based on the Paniotto formula with 95 percent probability.

	CAIPE-LT
Stage of study	Sample size (<i>n</i>)
Pilot study	106
Reliability of instrument	
Cronbach's alfa	1008
Test-retest reliability	196
Validity of instrument	
Exploratory factor analysis	1008
Confirmatory Factor Analysis	1008
Situation analysis	1583
Experiment	575

Table 2. Stage of study and sample size of students

Participants of experiment. PE teachers were informed about the planned intervention and were invited in collaboration with Lithuanian teacher professional development centres. This study included a convenience sample of 58 volunteering PE teachers and 575 schoolchildren from grades 5 to 9. Participants represented 22 physical education teachers who attended an 18-hour online APE course (Group I, 18 hours), 14 physical education teachers who attended a 40-hour contact APE course (Group II, 40-hours), and 22 physical education teachers who did not attend any of the courses (Control Group). Group I consisted of 22 PE teachers from 18 general education schools from six municipalities, Group II consisted of 14 PE

teachers from 11 general education schools from one municipality, and Control Group consisted of 22 PE teachers from 12 general education schools from two municipalities.

Three groups of schoolchildren from grades 5–9 were formed to evaluate the indirect effect of APE courses delivered to PE teachers on their students' attitudes towards the inclusion of children with disabilities into a regular PE class. Schoolchildren's groups were formed from the classes taught by the PE teachers participating in the intervention and were named in the same manner as teacher groups. Group I (students of PE teachers who took an 18-hour online APE course) consisted of 265 schoolchildren from grades 5–9 from 14 schools from five municipalities, Group II (students of PE teachers who took a 40-hour contact APE course) consisted of 114 schoolchildren from grades 5–9 from six schools from one municipality, and the Control Group (students of PE teachers who participated in the intervention but did not take any of the courses) consisted of 196 schoolchildren from grades 5–9 from six schools.

Both physical education teachers and student groups were formed randomly; group homogeneity was assessed by pre-tests. Homogeneity was evaluated by differences in PE self-efficacy and students' attitudes between groups (Experimental I, Experimental II and Control Group). First of all, it was determined what personal attributes influenced self-efficacy and attitudes of each group individually (Appendix 1), secondly, whether the experimental groups did not differ according to their self-efficacy and attitude indicators (Appendix 2). The analysis carried out revealed that there was no significant difference between the groups.

2.4. Intervention

Intervention 1 included an 18-hour online course for PE teachers "Possibilities of Adapted Physical Education theory and praxis in creating inclusive education environment in PE classes". The program included 8 sessions once per two weeks, prepared presentations, videos, publications were send to registered PE teachers' by e-mail. PE teachers were asked to confirm the receipt of e-materials by sending an e-mail with a message "Information received". PE teachers were offered consultations of specialists on the topics of the course by e-mail and/or by phone. Intervention 2 included 40 contact hours of APE course, 8 sessions, 5 hours

each (lectures, seminars, workshops and self-study) once per two weeks. During the intervention, PE teachers who participated in 18-hour online and 40-hour contact APE courses had to apply the received knowledge in practice, e.g. organise game or physical activities in PE classes where children with disabilities could be or were included. The course content covered knowledge about students with ID, PD, VI, ASD, Attention-deficit/hyperactivity disorder (ADHD) and behavioural disorders, psychological and education peculiarities, physical activity adaptation strategies and strategies of inclusion in a PE class (Figure 11).



Figure 11. The content of online 18-hour and contact 40-hour APE courses

Lectures were prepared and conducted by high-level and experienced lecturers in the area of Adapted Physical Activity from Lithuanian Sports University, teachers practicing with students with special educational needs, a Paralympic athlete, and a goalball judge.

These qualification improvement course programs have been accredited and registered at the Information Technology Centre for Education: 18-hour online course (Accredited Program Registration No. 213001098, Order No. V-4 2017-02-06) and 40-hour contact course (Accredited Program Registration No. 211000435, Order No. V-11 2017 -01-23); 18-hour online and 40-hour contact APE courses were offered to PE teachers free of charge and certificates were issued.

2.5. Research instruments

Instruments – Self-Efficacy Scale for Physical Education Teacher Education Majors towards Children with Disabilities (SE-PETE-D; Block, Hutzler, Barak, & Klavina, 2013) (Appendix 3), Physical Educators' Self-Efficacy towards Including Students with Disabilities – Autism (PESEISD-A; Taliaferro, Block, Harris, & Krauske, 2011) (Appendix 4) – were used in our study, which allowed to evaluate physical teachers' self-efficacy beliefs towards inclusion of students with special educational needs (intellectual disability, physical disability, visual impairments, and autism spectrum disorder) in regular education classes, and Children's Attitudes towards Integrated Physical Education – Revised (CAIPE-R; Block, 1995) (Appendix 5), the improved Lithuanian version of which allowed to assess the attitudes of students without disabilities towards inclusion of students with intellectual disability, physical disability and visual impairment into a regular physical education class.

The English version of the SE-PETE-D, PESEISD-A, and CAIPE-R instruments were translated into Lithuanian using the back translation technique described by Brislin (1986). This technique of translation requires four independent bilingual translators. Translator 1 and Translator 2 independently translated the original English versions of the questionnaires into Lithuanian. After comparing the translations, the translated instruments were forwarded to the other two bilingual translators who translated the instruments back into English. Finally, the retranslated versions were compared with the English versions by one of the authors of the English versions for final approval. In addition, an expert review was performed. Two Lithuanian experts of adapted physical activity were consulted about the clarity, conciseness and terminological precision of the Lithuanian versions of the SE-PETE-D, PESEISD-A, and CAIPE-R. The initial versions of the instruments were tested in pilot studies. This versions confirmed suitability for further analysis and were labelled SE-PETE-LT (Appendix 6), PESEISD-A-LT (Appendix 7) and CAIPE-R-LT (Appendix 8).

All questionnaires were anonymous: neither the participant nor the investigator noted the first or family name of participant in any document. Demographic questions (age, gender, attended adapted physical education, special education courses or seminars, the experience with including children with disabilities into PE classes during last 5 years, the support got from the specialists

(such as APE specialist, teacher assistant, special education teacher, physical therapist, psychologist), personal experience with persons with disabilities (friend, family member)) were included at the end of the instrument. Confidentiality of data was ensured: the data of the participant and the school were known only to the principal investigator, and the data was used only for scientific purposes and no one could find out the data of a particular participant or school.

2.5.1. SE-PETE-D

The SE-PETE-D instrument consisted of four parts: three scales - one for each disability, that is, intellectual disability (ID), physical disability (PD) and visual impairment (VI), and a demographic section. A vignette demonstrating a student with an ID, PD or VI, who was attending a PE class, was presented prior to the questions of each scale. The first scale consisted of 11 questions related to the inclusion of students with ID in a regular physical education class. The second scale followed with 12 questions related to PD. The third scale followed with 10 questions related to VI. The scale used for rating each question ranged from 1 to 5: 1 (no confidence), 2 (low confidence), 3 (moderate confidence), 4 (high confidence) and 5 (complete confidence). The self-efficacy score for scales is calculated based on the mean score of scale questions. According to Block et al.'s (2013) validation results, four factors were generated: instructing peers to assist the student with disability (PI) across all three scales; coping with specific adaptation requirements (SA) across the ID and VI scales; assuring the safety of the students with disability (S) only in the PD scale; and adapting instructions to keep students with disability staying on task (ST) only in the PD scale. The fourth part consisted of demographic questions concerning the participants' attributes, such as age, gender, years of experience, training in APE and/or special pedagogy, and support from other specialists.

This instrument aids in the study of PE teachers' SE levels when working with a variety of disability conditions depicting students with intellectual, physical and visual impairments during different situations of PE implementation, such as peers' instruction, safety, specific adaptations, and staying on task. Klavina et al. (2014) and Grenier et al. (2005) provided evidence suggesting that PE teachers' skills in instructing peers to assist students with SEN positively influenced

students' attitude towards classmates with SEN, and helped to create an inclusive environment in the class. Another important factor for creating an inclusive environment for all students is the ability of the PE teacher to ensure safety in the PE class (Tripp, Rizzo, & Webbert, 2007; Qi & Ha, 2012) and to create a motivational environment (Kodish et al., 2006; Ko & Boswell, 2013). The outcomes of the Baloun et al.'s (2016) and Kudláček, Baloun, and Ješina's (2018) studies revealed that group perception towards the modifications of the equipment and environment, together with appropriate instructions, were essential factors for assuring the success of students with SEN in PE classes. Therefore, it is important for PE teachers to be able to adapt instructions in order to keep their students with disability on task (Perlman & Piletic, 2012; Block et al., 2013; Lee & Baek, 2015; Kudláček et al., 2018). Also this instrument enables investigation of PE teachers' SE levels when working with students with intellectual, physical and visual impairments during different implementation stages of the physical education program, such as fitness testing, teaching sports skills and organizing sports games.

The study conducted by Block et al. (2013) showed that the SE-PETE-D was a valid and reliable instrument. Cronbach's alpha reliability was high (for ID = .86, PD = .90, and VI = .92). Although the chi-square was significant (compromising model fit) in all models except for the ID, other goodness of fit measures demonstrated acceptable model fit. In the three evaluated models the NFI and CFI exceeded the .90 cut-off criteria. In the ID scale the RMSEA demonstrated good fit, whereas in the PD and in the VI scale moderate fit.

2.5.2. PESEISD-A

The PESEISD-A was comprised of the SE scale and six other scales: mastery experience, vicarious experience, social persuasion, behaviour, physiological state and challenges. Demographic questions were included at the end of the instrument. Prior to filling in the questionnaires, the participants were given the description of a person with ASD.

Self-efficacy. The scale is designed to evaluate PE teachers' SE in mainstreaming students with ASD in a regular PE class and is called the Self-efficacy (SE) scale (10 questions). For the SE scale, participants were asked to rate their degree of confidence in their ability to perform each of ten tasks when

including students with ASD in regular PE classes: modify equipment, modify activities, create a safe environment, promote social interactions with peers, manage behaviours, modify instructions, assess motor sills, modify rules to games, collaborate effectively with other teachers/professionals, and motivate students. Prior to filling in the questionnaires the interviewees were given the description of a person with ASD. Statements of the SE scale are scored in the range from 0 to 10, with a score of 0 indicating that the respondent cannot do that at all, a score of 5 indicating that the respondent can moderately do that, and a score of 10 indicating the respondent is highly certain they can do that.

Mastery experience. The first scale is designed to evaluate PE teachers' mastery experiences, and is called the Mastery Experience (ME) scale (10 questions). For the ME scale, respondents rated the level of success they experienced in doing the same 10 identified tasks on a 5-point Likert scale of "not at all successful (less than 15% of the time)" to "very successful (more than 85% of the time)", with the added option of "I do not have any experience doing this".

Vicarious experience. The second scale is called the Vicarious Experience (VE) scale (10 questions). For the VE scale, respondents rated the level of success of other PE teachers they observed at performing the same ten identified tasks when including a child with ASD. Response choices were on a 5 point Likert scale ranging from "not at all successful" (less than 15% of the time) to "very successful" (more than 85% of the time), with the added option of indicating that they have not seen others perform the task.

Social persuasion. The third scale, Social Persuasion (SP) scale (10 questions), asked respondents to rate what others (teachers, parents, colleagues, supervisors, principals) had told them about their capabilities to include students with ASD in PE on a 5-point Likert scale of "not at all capable" to "very capable", with the added option of "I have not been told anything about my capabilities".

Behaviour. The fourth scale is called the Behaviour (BEH) scale (10 questions). For the BEH scale, respondents rated how frequently they performed the ten identified teaching tasks on a 5-point Likert scale from "never" to "always".

Physiological state. The fifth scale is called the Physiological State (PS) scale (2 questions). The PS scale asked participants to respond to two questions regarding how including a student with ASD in their PE class makes them feel (stressed or nervous). Responses were on a five point scale ranging from "definitely false" to "definitely true". Responses were reversely coded from one to

five so that a higher score ("definitely false") reflected a more favourable reaction.

Perceived challenges. The sixth scale – the Perceived Challenges (PCH) scale – asked participants to rate the extent to which each of 11 situations made it difficult to meaningfully include a student with ASD into their general PE program. The eleven situations included: "I am not sure how to modify activities", "I do not have time to make modifications", "I do not have appropriate equipment", "I have large class sizes", "there are multiple classes in the gym", "the students' skill level is very different than that of their peers", "I have no aid or support to help", "I do not have information about the student", "I have limited training on autism, the student has behavioural problems, and the student has problems staying on task". Responses were on a 5-point Likert scale from "not at all a problem" to "very much a problem". Responses were coded from one to five so that the higher score indicated a higher degree of perceived challenge.

Demographic factors. The end of the instrument covers demographic issues such as age, gender, attended adapted physical education (APE) as well as special education courses or seminars, the experience of including students with ASD into PE classes during last 5 years, the support got from the specialists (such as APE specialist, teacher assistant, special education teacher, physical therapist, psychologist), personal experience with persons with ASD (friend, family member).

Scoring. The responses of participants to the SE scale, ME, VE, SP, BEH, PS and PCH scales statements were summed up and the average was calculated (Taliaferro, 2010). A response of these scales "I do not have any experience doing this" (ME), "I have not seen other PE teachers doing this" (VE), and "I have not been told anything about my capabilities" (SP) was coded as a zero. For example, if an individual responded "I do not have any experience doing this" (ME) to two items on the scale, their scores were summed and then divided by 8 (Taliaferro, 2010). The resulting score indicated the average success of the participants' mastery experiences. Respondents who answered "I do not have any experience doing this" across all 10 items were given a total score of 0 (Taliaferro, 2010). This did not reflect that the participant failed to respond to the scale items (Taliaferro, 2010).

This instrument not only allows to identify PE teachers' SE towards including students with ASD but also to better understand the problems that cause the biggest difficulties to PE teachers to include students with ASD in a mainstream PE class, and understand the predictors that influence their SE and behaviour. According to the study conducted by Taliaferro (2010), PESEISD-A is a valid and reliable instrument, which reveals the links between self-efficacy (internal reliability coefficient (Cronbach's Alpha) $\alpha = .98$, test-retest reliability coefficient r = .859) and mastery experiences ($\alpha = .92$; r = .888), vicarious experiences ($\alpha = .96$; r = .931), social persuasion ($\alpha = .95$; r = .708), behaviour ($\alpha = .88$; r = .603, physiological states ($\alpha = .96$; r = .771), and challenges ($\alpha = .88$; r = .762). The results of an exploratory factor analysis on the 10 question selfefficacy scale of the Taliaferro's (2010) study revealed a one-factor solution explaining 57.05 % of the variance.

2.5.3. CAIPE-R

The instrument CAIPE-R, used in this research, consisted of a description about a student who had a physical disability (PD) (used a wheelchair) and 11 questions. The CAIPE-R instrument consists of a description of a hypothetical student with a disability presented by a written vignette, demographics, experiences (family member, friend, classmate) with individuals with disabilities, and level of competitiveness, 6 statements about attitudes including a students with a disability in physical education classes (general attitude subscale) and 5 statements about attitudes modifying rules of sports (sport modification attitude subscale). Response to each statement is obtained on a 4-point Likert scale (4 = ves, 3 = probably ves, 3 = probably ves)2 = probably no, 1 = no). Attitude score could be computed by summing or averaging scale/subscale statements. When computing scores, a single CAIPE-R attitude score can be determined, or two scores (inclusion in general physical education and sport modifications) can be calculated, or a combination of these two options can be calculated, totalling three scores (Block, 1995). The revised CAIPE-R inventory was validated on a sample of 208 participants from the 5th and 6th grades. The instrument is a validated attitude survey with an internal reliability coefficient of .87, a test-retest reliability coefficient of .78 for the general attitude subscale; a .66 internal and .56 test-retest reliability coefficients for the sport modification subscale (Block & Zeman, 1996).

According to Block (1995), CAIPE-R is as reliable as the original CAIPE while using a different description, that is why the CAIPE-R could be used to measure attitudes towards specific types of disabilities in isolation or possibly to

compare responses of children without disabilities towards peers with different disabilities. In the Lithuanian version of CAIPE, two scales of the questionnaire were added: intellectual disability (ID) and visual impairment (VI). The Lithuanian questionnaire version was used to measure the attitude of students without disabilities towards including students with intellectual disability, physical disability and visual impairment in regular PE in Lithuanian general education schools. The CAIPE-LT version survey has four parts. Part I consists of demographic questions such as age, gender, year, grade, experiences dealing with a person with disabilities (in family and at school) and other questions related with the level of competitiveness. Part 2 consists of 11 questions related to the attitudes towards inclusion of students with an ID in regular PE classes, Part 3 consists of 11 questions related to the attitudes towards inclusion of students with a PD in regular PE classes, and Part 4 consists of 11 questions related to the attitude towards inclusion of students with a VI in regular PE classes. The original version used a description of a child with a physical disability participating in a softball game. Our version labelled CAIPE-LT was adapted describing a child with intellectual disability participating in football, with physical disability participating in basketball, and with visual impairment participating in "Quadrate" game. These games were selected because they are much more popular in Lithuanian schools than softball. Each scale consists of a description of a hypothetical student with a disability presented by a written vignette. The responses of each participant to the scale/subscale statements are summed up and the average is calculated.

2.6. Data analysis

SPSS Version 22.0 software and AMOS Version 23.0 were used to process the statistical data.

2.6.1. Validation of research instruments

Construct validity. The factor structure and construct validity were assessed by Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

EFA. Following Field's (2009) recommendation, an EFA was carried out using the principal component analysis (PCA) extraction method, followed by

orthogonal (Varimax) rotation to maximize variance. Before conducting the PCA, statistical hypotheses necessary for PCA were tested (Field, 2009). For example, the Kaiser-Meyer-Olkin (KMO) index should be greater than .70 and is considered inadequate if less than .50 (Field, 2009), and Bartlett's test of sphericity has to be highly significant (p < .001) (Field, 2009). The optimal number of factors was determined by latent root criteria (eigenvalues > 1.0, the Kaiser's criterion K1) and examination of the scree plot (Field, 2009). An item with communality of less than .40 was removed from the analysis, and the PCA was computed again (Field, 2009). In addition, in order to assess the fit of the factor models, we examined the differences between the model-based correlations and the observed correlations; not more than 50% of the residuals should be greater than .05 (Field, 2009).

In the SE-PETE-D validity study, EFA for different study groups was carried out according to demographic factors. The aim was to determine how the scale structure would change according to gender, APE course or seminar, support, and personal as well as professional experience with persons with disabilities. The only difference in the structure of the scale across demographics was encountered when dividing the sample according to their previous attendance in an APE course. The EFA was performed with the total sample size (n = 171) and then separately with each of the groups – PE teachers who attended an APE course (n = 33) and PE teachers who did not attend such a course (n = 138). Based on the EFA results, we performed a separate factor analysis with an exploratory and confirmatory factor analysis with 138 participants. The data were randomly divided into two independent samples (n = 69 cases in each half). One half was analysed with the EFA to re-establish the factorial structure obtained with the total group, and the second half was analysed with CFA to confirm this structure.

CFA. The data was analysed with Structural Equation Modelling (SEM) using path analysis (Teo, Tsai, & Yang, 2013). SEM is a set of techniques for testing a theory by examining correlation; covariance and even differences in means. It can be illustrated using an elaborate and sophisticated form of box-and-arrow model known as a path diagram (Teo et al., 2013). The goodness-of-fit of each model was assessed using the chi-square (χ^2), normal fit index (NFI), comparative fit index (CFI) and root mean square error of approximation (RMSEA). Insignificant chi-square results at a .05 threshold are considered as an acceptable model fit (Teo et al., 2013). Values of NFI and the CFI greater than .90 are considered as an acceptable model fit (Block et al., 2013; Teo et al., 2013). The

CFI is a revised form of the NFI, which takes into account sample size that performs well even when the sample size is small (Tabachnick & Fidell, 2007). RMSEA values below .05 are considered to reflect good fit to the model, values .05 - .10 - moderate fit and values greater than .10 - poor fit (Teo et al., 2013).

Reliability analysis. Cronbach's alpha coefficient was employed to determine internal consistency, and test-retest reliability was employed to determine stability over time. Cronbach's α value of .70 and above imply an acceptable level of internal consistency (Bryman, 2015; Field, 2009). Test-retest reliability was used to examine stability among items in each scale/subscale. The period between the test-retest was 14 weeks. Test-retest reliability was assessed by using Pearson's/or Spearman-Brown's correlation. Following Vallerand (1989), we estimated that a coefficient of .60 or more for test retest is satisfactory.

Descriptives. Means (M) and standard deviations (SD) were computed to present the demographic characteristics of the participants, as well as raw data for each of the items in each of the scale/subscales.

Spearman's rank correlation coefficient (r) was used to discover the strength of the relationship between the scales/subscales.

Mean comparison. One-way ANOVA was computed within subjects to explore the similarities and differences across scales. Tukey's post-hoc tests were employed, following significant differences. A parametric Independent-Samples T-test or Mann-Whitney U test was used to determine whether there was a significant difference between the means of scales/subscales.

2.6.2. Situation research of physical education teachers' self-efficacy and children's attitudes towards inclusion of children with disabilities into physical education classes

Descriptive statistics including mean, standard deviations, and frequency counts were used to characterize participants' demographics. The data were tested for normal distribution using the Kolmogorov–Smirnov test that shows if the data were normally distributed (p > .05) or if the distribution of variables is significantly different from a normal distribution with p < .05. A parametric Independent-Samples *t*-Test and Mann-Whitney test were used to determine whether there was a statistically significant difference between the means of scale scores across groups constructed according to demographic variables of interest. Effect size of Hedge's

g was used to assess differences between groups. Hedge's g values signifies approximately medium (.20 to .50) to significant (.50 to .80) effect sizes according to Cohen's (1988) guidelines. Spearman's rank correlation coefficient was used to determine the strength of the associations between the scales/subscales. To explore what sources of self-efficacy determine the levels of SE in teaching students with ASD, stepwise multiple regression analyses were carried out. This multiple regression analyses were performed using separate subsets of the sample: who had reported having prior experiences in all four, two or one sources of SE. A second multiple regression analysis was carried out to examine the effect of demographic factors on overall variance explained in SE scores. To explore what personal attributes determine the attitudes of children towards inclusion of peers with disability, stepwise multiple regression analysis was performed. Cohen's (f^2) coefficient for effect size in multiple regression was calculated. According to Cohen's (1988) guidelines $f^2 \ge .02$, $f^2 \ge .15$, $f^2 \ge .35$ represent small, medium, and large effect sizes, respectively. The Chi square (X^2) test was used to evaluate the homogeneity of the variables in the PCH scale. A path analysis – a confirmatory analysis technique - was used to test the model and estimate the magnitude and significance of the causal relationships between the self-efficacy, sources of selfefficacy, behaviour and perceived challenges. The goodness-of-fit of the model was assessed using the chi-square (χ^2), normal fit index (NFI), comparative fit index (CFI) and root mean square error of approximation (RMSEA). Insignificant chi-square results at a .05 threshold are considered as an acceptable model fit (Teo et al., 2013). Values of NFI and the CFI greater than .90 are considered as an acceptable model fit (Teo et al., 2013). RMSEA values below .05 are considered to reflect good fit to the model, values .05 - .10 - moderate fit and values greater than .10 - poor fit (Teo et al., 2013). The Chi square (X^2) test was used to evaluate the homogeneity of the variables in the PCH scale.

2.6.3. The natural experiment

Descriptive statistics (mean, standard deviations, and frequency counts) were used to characterize participants and groups.

Pre-intervention and post-intervention measures of physical education teachers' self-efficacy were collected and analysed for the control and experiment

groups to see if the interventions (18-hour online APE course and 40-hour contact APE course) were effective in improving general physical educators' self-efficacy to include students with intellectual disabilities, physical disabilities, visual impairments, and autism spectrum disorders into a regular physical education class. Pre-intervention and post-intervention measures of students' attitudes were collected and analysed for the control and experiment groups to see if indirect interventions (18-hour online APE course studies and 40-hour contact APE course) were effective in improving students' attitudes towards the inclusion of students with intellectual disabilities, physical disabilities and visual impairments into a regular physical education class. Data were analysed using SPSS General Linear Modelling (GLM) repeated measures. It was the analysis for the one-way repeated measures. Spearman's rank correlation coefficient was calculated to measure the statistical dependence between teachers' self-efficacy scores and children's attitude scores (attitude towards inclusion score and attitude towards game modification score showed the relationship between these survey items before and after the intervention).

3. RESULTS

3.1. Validity and reliability of measurement instruments used in the research

3.1.1. Analysis of structure, validity and reliability of Self-Efficacy Scale for Physical Education Teacher Education Majors towards Children with Disabilities

3.1.1.1. Study I (Pilot study)

Two Lithuanian experts of adapted physical activity were consulted about the clarity, conciseness and terminological precision of the Lithuanian version of the SE-PETE-D. The initial version of the instrument tested a sample of 75 PE teachers from 16 municipalities (males n =14; females n = 61; age from 22 to 62 years old, M = 45.61 SD = 8.74), who work in general education schools (main, progymnasiums, general schools, gymnasiums). Thirty six teachers of physical education in the study indicated that they had experience in physical education classes with students with intellectual disabilities, 32 physical education teachers had experience with students with physical disability and 15 physical education teachers had experience with students with visual impairments. After performing the analysis of the indicators of self-efficacy, the Cronbach's alpha coefficients were very high for each scale: ID scales $\alpha = .97$ (M = 3.30 SD = .85), PD scales $\alpha = .97$ (M = 3.20 SD = .81), and VI scales $\alpha = .98$ (M = 2.80 SD = 1.01).

The first principal component analysis (PCA) was conducted on the ID scale (11 items). The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis, exhibiting a KMO index of .915, p < .001. The K1-criterion and scree plot indicated a one-factor solution explaining 74.20%, with one eigenvalue exceeding 1.0. A second PCA was conducted on the PD scale of 12 items. The KMO measure verified the sampling adequacy for the analysis, and the KMO index of the PD scale was .909, p < .001). The K1-criterion and scree plot indicated a two-factor solution explaining 81.91%, with one eigenvalue exceeding 1.0 (Table 3). The third PCA was conducted on the VI scale of 10 items. The KMO measure verified the sampling adequacy for the analysis and the KMO index was .920, p < .001). The K1-criterion and scree plot indicated a one-factor solution explaining 83.88%, with one eigenvalue exceeding 1.0.

		Fac	Eigenvalue %	
Scale	Sign of Item	1 Factor load	2 Factor load	Variance
	Α	.24	.89	
	В	.29	.93	
bility	С	.48	.76	
	D	.46	.74	
	E F	.62	.63	
disa		.76	.50	91.010/
cal	G	.85	.31	81.91%
hysi	Н	.84	.33	
Ч	Ι	.62		
	J	.85	.26	
	K	.77	.47	
	L	.83	.34	

Table 3. Structure of physical disability scale factors after the application of Varimax rotation method

3.1.1.2. Study II

In the description of the following results, we repeated the method used in the study of Block and associates (2013) by designating the scales' items in the text as well as in Tables 5 and 6, and Figure 11, with alphabetical labels for facilitating orientation throughout the manuscript. These labels do not necessarily identify similar items across scales.

Participants' demographics

Seventy-three PE teachers participated in the electronic survey and 120 PE teachers filled in the paper-based questionnaires. Among 171 participants, with age range from 22 to 65 years (M = 46.47; SD = 9.08), there were 51 males (M = 47.02; SD = 10.48) and 120 females (M = 46.24; SD = 8.46). Participants had general PE teaching experience ranging from 1 to 42 years (M = 21.52; SD = 9.29). Thirty-three PE teachers indicated that they had participated in an APE course or seminars during their studies or after graduation. Thirty-seven PE teachers reported experience working with students with ID, 20 had experience working with students with VI in general PE classes in the last five years. Six PE teachers had support from an APE

specialist – 29 from a teacher assistant, 106 from special education teachers, 18 from a physical therapist and 17 from other specialists. Nineteen PE teachers noted that they had a friend with ID, 18 PE teachers noted that they had a friend with PD and 23 had a friend with VI. Thirteen PE teachers reported that they had a family member with ID, seven PE teachers had a family member with PD, and seven - a family member with VI. In order to perform the test-retest analysis, a group of nine males and 12 females, in total 22 PE teachers, was formed. The mean age of participants in this group was 52.73 years (SD = 6.37 years). These participants had a mean general PE teaching experience of 28.82 years (SD = 8.64 years). Fifteen of these PE teachers reported having experience working with students with ID, nine had experience working with students with PD and five had experience working with students with VI in general PE in the last five years.

APE course or seminar impact on SE

T-tests were calculated to measure differences between the SE of PE teachers who attended an APE training (course or seminar) and PE teachers who did not participate in such training. The results indicated significant group differences in all scales (Table 4).

	Group of PE teachers						
Scale	Had APE course or seminar (<i>n</i> = 33)	No APE course or seminar (n = 138)	р				
	M (SD)	M (SD)	-				
ID	3.54 (.68)	3.25 (.80)	.043				
PD	3.50 (.66)	3.01 (.89)	.001				
VI	3.44 (.75)	2.69 (1.01)	.000				

 Table 4. Comparison analysis between PE teachers' SE with and without APE course or seminar in each scales

Construct validity

The descriptive statistics for each item (mean and standard deviation) and principal component analysis (PCA) data with the total sample size (n = 171) are presented in Table 5.

Since participants used a Likert Scale ranging from 1–5, it can be presumed that a mean score higher than 3 and lower than 4 would indicate moderate SE, 4 or above would indicate high SE, and below 3 would indicate low SE. It should be noted that no item had a mean score below 3 in the ID scale, while two items in the

PD scale and six items in the VI scale had a mean score below 3 (Table 5).

The first PCA was conducted on the ID scale (11 items). The KMO measure verified the sampling adequacy for the analysis, exhibiting a KMO index of .937 and all KMO values for individual items > .89, which is above the desired level of .70. Bartlett's test of sphericity (χ^2 [55] = 1738.7, p< .001) indicated that correlations between items were sufficiently large for PCA. An initial examination of the items using PCA revealed high communalities, and ranged from .57 to .76 (Table 5). The K1-criterion and scree plot indicated a one-factor solution explaining 69.02% of the variance (Table 5). There were 29 (43.50%) non-redundant residuals with absolute values greater than .05, suggesting an acceptable model fit.

A second PCA was conducted on the PD scale of 12 items. The KMO measure verified the sampling adequacy for the analysis, and the KMO index of the PD scale was .935. All KMO values for individual items were > .90, which is above the desired level of .70. Bartlett's test of sphericity (χ^2 [66] = 2306.59 p < .001) indicated that correlations between items were sufficiently large for PCA. An initial examination of the items using PCA revealed high communalities and ranged from .70 to .77 (Table 5). The K1-criterion and scree plot indicated a one-factor solution explaining 73.45% of the variance (Table 5). There were 32 (48.0%) non-redundant residuals with absolute values greater than .05, suggesting an acceptable model fit.

The third PCA was conducted on the VI scale of 10 items. The KMO measure verified the sampling adequacy for the analysis and the KMO index was .93; all KMO values for individual items were > .89, which is above the desired level of .70. Bartlett's test of sphericity ($\chi 2$ [45] = 2303.34, p < .001) indicated that correlations between items were sufficiently large for PCA. An initial examination of the items using PCA revealed high communalities, and ranged from .76 to .87 (Table 5). The K1-criterion and scree plot indicated a one-factor solution explaining 81.90% of the variance (Table 5). There were 11 (24.0%) non-redundant residuals with absolute values greater than .05, suggesting an acceptable model fit.

For all scales, the numerical expressions made it possible to highlight the dominance of one factor in relation to other factors. Other factors' eigenvalues were significantly less than one. This suggests that the scale items were unidimensional (Table 5).

Scale												
Sign			ID				PD				VI	
of Item	М	SD	Com- munal- ity	One Factor Load	М	SD	Commu nality	One Factor Load	М	SD	Com- munal- ity	One Factor Load
А	3.47	.90	.57	.76	3.04	1.01	.70	.83	2.74	1.11	.78	.88
В	3.40	.97	.74	.86	3.08	1.04	.77	.88	3.01	1.11	.78	.88
С	3.53	.97	.66	.81	3.28	1.04	.75	.87	2.99	1.14	.76	.87
D	3.30	.95	.69	.83	3.22	1.11	.70	.84	2.74	1.08	.85	.92
Е	3.14	.90	.72	.85	3.04	.95	.75	.86	2.97	1.12	.85	.92
F	3.12	1.01	.69	.83	3.16	1.07	.75	.87	2.57	1.05	.82	.91
G	3.22	.96	.76	.87	2.87	1.00	.71	.84	2.80	1.13	.84	.92
Н	3.49	.98	.67	.82	3.30	.98	.76	.87	2.75	1.10	.84	.92
Ι	3.20	.95	.69	.83	3.04	1.01	.74	.86	3.00	1.12	.87	.93
J	3.11	.96	.69	.83	2.89	1.00	.70	.83	2.81	1.16	.82	.91
Κ	3.44	.93	.70	.84	3.06	1.00	.77	.88				
L					3.31	1.00	.72	.85				
Total	3.31	.79	Eigenval % Varian 69.02	ue 7.59 nce	3.11	.87	Eigenval % Variar 73.45	ue 8.81 nce	2.84	1.01	Eigenval % Variar 81.90	ue 8.19 nce

Table 5. Descriptive statistics, communalities before and after extraction, the eigenvalues,and percentage of one extracted factor (n = 171)

The results of the EFA for different groups that were formed according to previous participation in an APE course or seminar indicated that participation significantly influenced the structure of the scales. Table 6 describes the independent factor structures generated for those who attended (n = 33) and those who did not attend (n = 138) an APE course or seminar and compared with the structure provided by Block et al. (2013). KMO estimate and significance of Bartlett's test of sphericity were suitable for EFA in both samples (Table 6).

Case of Lithuanian study					B	lock et	al. (2013)				
		No APE	(n = 138)		Had AP	E(n=3)	3)		<i>n</i> =	243	()
C 1	T.	Factors'	\/	Б (, 1	1.		Б			
Scale	Item	loadings	KMO	Fact	ors' loac	iings	KMO	Fac	tors load	ings	KMO
		F1		F 1	F 2	F 3		F 1	F 2	F 3	
	А	.77		.63					removed		
	В	.86		.65	.60				removed		
	Ē	.82			.85			.81			
	D	.83		.81					.82		
	Е	.86	03	.68	.53		.82		.69		83
ID	F	.84	n < 001	.87					removed		n < 0.01
	G	.88	<i>p</i> < .001	.85			<i>p</i> < .001		removed		p < .001
	Η	.83			.73			.88			
	Ι	.84		.48	.66				removed		
	J	.83		.43	.68				.83		
	Κ	.85			.87			.78			
Varian	ce red %	69.94	Total 69 94	37.15	35.74		Total 72 89	34.97	33.16		Total 68 14
explain	Λ	85	07.71	85			72.09	80			00.11
	Л	.05		.05				.00			
	В	.89		.94 70		40		.84	75		
	D	.89		.19		.40			.15	88	
	E	87		.73	54		0.4	.69		.00	
DD	F	.86	.93	.58	.58		.84	.0>		.83	.83
rv	G	.88	<i>p</i> < .001		.94		n < 0.01	.67			<i>p</i> < .001
	Η	.88			.41	.83	p < .001		.92		
	Ι	.86		.82					removed		
	J	.84			.86				removed		
	K	.87			.62	.43				.80	
	L	.87				.91			.93		
Varian	ce ied %	75.06	Total 75.06	38.91	24.67	18.48	Total 82.06	25.47	25.16	23.80	Total 74.43
	А	.89			.73			.69			
	В	.89			.90				.89		
	Ē	.88			.74				.54		
	D	.93		.67	.51		73	.57			
VI	Е	.92	.92	.63	.63		.15		.82		.87
• •	F	.92	<i>p</i> < .001	.80			p < .001		removed		<i>p</i> < .001
	G	.92		.84			P	.84			
	Н	.91		.85				.89			
	l T	.93		.75	.49			76	.84		
Varian	J	.92	Total	.07			Total	./0			Total
explain	ied %	82.90	82.90	45.49	31.91		77.40	37.07	33.41		70.52

 Table 6. EFA comparison of results of PE teachers' in separate groups with results obtained by Block et al. (2013) EFA

Notes: The factor labels in the Lithuanian case of sample n = 138 in all scales, F1= self-efficacy including students with SEN in PE class; the factor labels in the Lithuanian case of sample n = 33 in ID, F1 = staying on task and when teaching sport skills, modify test, equipment and actual skills, F2 = peers' instruction, modify rules and stay on task during the game; in PD, F1 = modify the goals and the task, instruct peers during fitness testing, F2 = safety and modify equipment, F3 = peers' instruction when teaching sport skills and during the game; in VI F1 = inclusive when teaching sport skills and during fitness testing. The Factor labels in the US case of sample n = 243 in ID, F1 = peers' instruction, F2 = staying on task; in PD F1 = specific adaptations, F2 = peers' instruction.

An integrated EFA and CFA was performed on the group of PE teachers who had not attended any previous APE training (n = 138). This sample was randomly divided into two groups (n = 69 cases in each half). An EFA was conducted on the first half of the data (group = 0) and a CFA on the second half (group = 1). Before conducting the PCA with the first half of the data (n = 69), we tested several of the statistical hypotheses for such analyses. The KMO index was greater than .70 in each scale: .911 (ID), .905 (PD), .909 (VI); Barlett's test of sphericity was statistically significant (p < .001). These results indicate that the sample size was adequate and the extracted factors accounted for substantial observed variance. An initial examination of the items using PCA revealed high communalities, ranging from .69 to .81 (ID), .69 to .81 (PD) and .76 to .87 (VI). The K1-criterion and scree plot indicated a one-factor solution explaining 73.08% (ID), 71.83% (PD) and 81.28% (VI) of the variance. The results of the CFA (Figure 12) confirm the structure revealed in the EFA. To improve the model-data fit, the Amos software automatically created a 'modification index', which suggested several errors (residuals, designated as an e + number in Figure 12) to be correlated. The chi-square was insignificant (model fit) in all models. The other goodness of fit measures also demonstrated an acceptable model fit. In the three evaluated models, the NFI and CFI exceeded the .90 cut-off criteria. In the ID and VI scales the RMSEA demonstrated good fit to the model, whereas in the PD - amoderate fit (Figure 12).



Figure 12. Path diagram of the ID – Intellectual disability scale, PD – Physical disability scale, and VI – Visual impairment scale (*n* = 69)

Reliability evidence

Cronbach's alpha reliability for all items in each of the scales was as follows: α for ID scale (11 items) .96 (M = 3.31; SD = .79), α for PD scale (12 items) .97 (M = 3.11; SD = .87) and α for VI scale (10 items) = .98 (M = 2.84; SD = 1.01).

The Pearson correlation coefficient of SE-PETE-D-LT for assessing testretest reliability was r = .70; correlation coefficients of each scale are shown in Table 7.

Casla	Cronbac	Pearson (test-retest)		
Scale	1 Time α	2 Time α	r	
Intellectual disability	.87	.84	.54*	
Physical disability	.96	.96	.75**	
Visual impairment	.93	.93	.63**	

Table 7. Scale data for the test-retest reliability (n = 22)

Note. Correlation is significant at the .01** and .05* level.

Comparison of SE-PETE-D-LT scales

In order to examine the similarities and differences across scales, mean scales' scores were compared using within-subjects one-way ANOVA. Statistically significant differences between means of scales were determined by one-way ANOVA (F (2, 510) = 12.213 p < .001), and follow-up post-hoc analysis determined significant differences between the ID and VI (p < .001) and PD and VI (p < .05) scales. VI (M = 2.84; SD = 1.01) was lower than both ID (M = 3.31; SD = .79) and PD (M = 3.11; SD = .87).

3.1.2. Analysis of structure, validity and reliability of physical education teachers' self-efficacy towards including students with disabilities – autism

3.1.2.1. Study I (Pilot study)

The initial version of the instrument was tested with a sample of 43 PE teachers from 20 municipalities (males n = 26; females n = 17; age from 25 to 62 years old, M = 47.79 SD = 8.68), who worked in general education schools

(progymnasiums, general schools, gymnasiums). Ten of the physical education teachers who participated in the study indicated that they had experience in physical education classes with students with Autism Spectrum Disorder. After analysing the scales of the instrument, the Cronbach's alpha coefficients were very high: SE scale $\alpha = .970$ (M = 5.42; SD = 2.08), ME scale $\alpha = .992$ (M = .99; SD = 1.52), VE scale $\alpha = .995$ (M = .79; SD = 1.41), SP scale $\alpha = .996$ (M = .71; SD = 1.43), BEH scale $\alpha = .995$ (M = 1.98; SD = 1.43), PS scale $\alpha = .966$ (M = 2.78; SD = 1.25), and PCH scale $\alpha = .942$ (M = 2.97; SD = 1.06).

The validity of self-efficacy scale construct was verified through exploratory factor analysis revealing a one-factor solution accounting for 79.88% of the variance, the KMO measure verified the sampling adequacy for the analysis, exhibiting a KMO index of .890 and all KMO values for individual items > .85. Bartlett's test of sphericity (χ^2 [45] = 664.018, p < .001) indicated that correlations between items were sufficiently large for the PCA. An initial examination of the items using PCA revealed high communalities and ranged from .69 to .86.

3.1.2.2. Study II

Fifty-nine PE teachers participated in the electronic survey and 309 PE teachers filled in the paper-based questionnaires. The 346 PE teachers from 28 municipalities were included in the basic data analysis. Participants' age ranged from 24 to 65 years (M = 47.19; SD = 9.04); gender distribution was 143 males (M = 46.04; SD = 10.35) and 203 females (M = 48.09; SD = 7.92). Participants had general PE teaching experience ranging from 1 to 45 years (M = 22.06; SD = 9.86). Demographic information is illustrated in Table 8.

Factors		n	Percentage
Had undergraduate or graduate course			
Yes		73	21.10
No		273	78.90
Had undergraduate or graduate course	s in Special Education		
Yes	176	50.90	
No		170	49.10
Had included students with ASD in Pl	E class		
Yes		166	48.00
No		180	52.00
Had support from APE specialist			11.60
Had support from Teacher assistants			14.50
Had support from Special Education Teacher			45.70
Had support from Physical therapist		30	8.70
Personal experiences with ASD:	No experience	319	92.20
	Yes	27	7.80
ME, VE & SP		106	30.60
ME &VE		25	4.90
ME & SP		17	7.20
VE &SP		4	1.20
ME only		44	12.70
VE only		21	6.10
SP only		5	1.50
ME, VE & SP did not have		124	35.80
Total		346	

Table 8.	Information	of physical	education	teachers	(n = 346))
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Note. APE = Adapted physical education; ASD = Autism Spectrum Disorder; PE = physical education; ME = mastery experience; VE = vicarious experience; SP = social persuasion; *n* = number of physical education teachers.

In order to perform the test-retest analysis, a group of nine males and 13 females, in total 22 PE teachers, was formed. The mean age of the group participants was 52.73 years (SD = 6.37 years). The participants had a mean general PE teaching experience of 28.82 years (SD = 8.64 years). Eighteen of these PE teachers reported having experience working with students with ASD in general PE in the last five years.

The EFA of SE scale generated a one-factor solution accounting for 82.99%

of the variance, the KMO measure verified the sampling adequacy for the analysis, exhibiting a KMO index of .941 and all KMO values for individual items > .90. Bartlett's test of sphericity (χ^2 [45] = 5131.7, p < .001) indicated that correlations between items were sufficiently large for the PCA. An initial examination of the items using PCA revealed high communalities and ranged from .74 to .88. Cronbach's alpha measured internal consistency of the scales and showed that all statements of the scales perfectly reflected the tested values (Table 9).

Scales	n of Items	Mean	SD	Cronbach's Alpha
Self-efficacy	10	5.36	2.18	.977
Mastery experience	10	1.69	1.65	.991
Vicarious experience	10	1.35	1.63	.994
Social persuasion	10	1.33	1.81	.996
Physiological state	10	2.49	1.49	.993
Behaviour	2	2.97	1.17	.932
Perceived challenges	11	3.37	.94	.931

Table 9. Cronbach's Alpha values of PESEISD-A-LT instrument scales (n = 346)

A repeated interview with the same respondents was done after 14 weeks to retest the stability of the scale. The Spearman-Brown's correlation coefficient of scales for assessing test-retest reliability was > .80, except for the Perceived Challenges scale, the test-retest reliability coefficient of which was r = .46; correlation coefficients of each scale are shown in Table 10.

Scales	Cronbac	h's Alpha	Spearman-Brown (Test-retest)
	1 Time	2 Time	r
Self-efficacy	.97	.97	.88
Mastery experience	.98	.98	.89
Vicarious experience	.99	.99	.85
Social persuasion	.98	.99	.87
Physiological state	.99	.99	.88
Behaviour	.79	.74	.81
Perceived challenges	.91	.95	.46

Table 10. The PESEISD-A-LT instrument scales of the test-retest reliability (n = 22)

Correlation analysis indicated significant relationships between scales (p < .01; Table 11).

Scale	SE	ME	VE	SP	PS	BEH	РСН
SE	_						
ME	.366*	_					
VE	.282*	.574*	_				
SP	.271*	.616*	.600*	_			
PS	300*	299*	186*	201*	_		
BEH	.296*	.796*	.580*	.628*	.292*	_	
РСН	343*	312*	249*	269*	456*	315*	_

Table 11. Inter-correlations of PESEISD-A scales

Note. SE = Self-efficacy; ME = mastery experience; VE = vicarious experience; SP = social persuasion; PS = physiological state; BEH = behaviour; PCH = perceived challenges; * = correlation is significant at the .01 level.

3.1.3. Analysis of structure, validity and reliability of the children's attitudes towards integrated physical education-revised

3.1.3.1. Study I (Pilot study)

Data were collected from 106 5-8th grade students (63 males and 43 females), mean age 12.63, SD = 1.24. Even 17.9 % of students, who participated in the study, indicated that they had their peers with disabilities in the general physical education class. After the arithmetic analysis of instrument scales, Cronbach's alpha coefficients were found to be very high: ID scale $\alpha = .922$ (M = 3.20; SD = .69), PD scales $\alpha = .920$ (M = 3.22; SD = .72), VI scales $\alpha = .924$ (M = 3.20; SD = .77).

The first principal component analysis was performed on the ID scale (11 items). The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis, exhibiting a KMO index of .912 and all KMO values for individual items > .88, which was above the desired level of .70. Bartlett's test of sphericity (χ^2 [55] = 717.47, p < .001) indicated that correlations between items were sufficiently large for PCA. An initial examination of the items using PCA revealed high communalities, and ranged from .54 to .82. The K1-criterion and scree plot indicated a one-factor solution explaining 57.48%, with one eigenvalue exceeding 1.0.
A second PCA was conducted on the PD scale of 11 items. The KMO measure verified the sampling adequacy for the analysis, and the KMO index of the PD scale was .897. All KMO values for individual items were > .84, which was above the desired level of .70. Bartlett's test of sphericity (χ^2 [55] = 710.10 p < .001) indicated that correlations between items were sufficiently large for PCA. An initial examination of the items using PCA revealed high communalities and ranged from .60 to .86. The K1-criterion and scree plot indicated a one-factor solution explaining 56.17%, with one eigenvalue exceeding 1.0.

The third PCA was conducted on the VI scale of 11 items. The KMO measure verified the sampling adequacy for the analysis and the KMO index was .92; all KMO values for individual items were > .83, which was above the desired level of .70. Bartlett's test of sphericity ($\chi 2$ [55] = 788.16, p < .001) indicated that correlations between items were sufficiently large for PCA. An initial examination of the items using PCA revealed high communalities, and ranged from .40 to .81. The K1-criterion and scree plot indicated a two-factor solution explaining 68.97%, with one eigenvalue exceeding 1.0. The VI scale included two factors, *F1 general attitude* (items no. 1, 3, 4, 5, 6, 9) and *F2 sport modification* (items no. 2, 7, 8, 10, 11) (Table 12).

Scale	Item number	F1 loadings	F2 loadings
	1	.77	
	2		.53
Conoral attituda	3	.85	
General attitude	4	.79	
	5	.76	
	6	.81	
	7		.87
	8		.78
Sport modification	9	.72	
	10		.84
	11		.68
	Eigenvalue	6.34	1.25
	% Variance	40.90	28.07
	Cum. % Variance	40.90	68.97

Table 12. Factor loadings of principal components for CAIPE-LT of VI scales items (n = 106)

3.1.3.2. Study II

In the course of the survey, 1008 students from 5–8th grades from 8 general education schools were surveyed, with an average age of M = 12.90, SD = 1.21 (boys M = 12.87, SD = 1.23, girls M = 12.93, SD = 1.18). The first school comprised 10.5% of the sample, the second school – 6.7%, the third – 25.5%, the fourth – 3.9%, the fifth – 15.5%, the sixth – 23.5%, the seventh – 4.7%, the eighth – 9.7%. Indicating the breakdown according to the forms, the sample was 18.7% of fifth grade students, 23.9% students in the sixth grade, 28.3% students in the 7th grade and 29.2% students in eighth grade. A more detailed demographic statistics of the questionnaire is presented in Table 13.

Factors		Frequency	Percentage
Gender			
	Male	521	51.69
	Female	487	48.31
* Level of competitiven	ess		
-	Very competitive	193	19.15
	Somewhat competitive	622	61.70
	Not competitive	193	19.15
Had a family member o	or close friend who has a disability		
	Yes	172	17.06
	No	836	82.94
Had a student with disa	bilities in regular education class		
	Yes	202	20.04
	No	806	79.96
Had a student with disa	bilities in physical education class		
	Yes	174	17.26
	No	834	82.74

Table 13. The statistical information about the students (n = 1008)

Note.* – Very competitive (I like to win, and I get very upset if I lose); Somewhat competitive (I like to win, but it is OK if I lose sometimes); Not competitive (It really doesn't matter to me if I win or lose; I just play for fun).

A separate sample group was created for the test-retest analysis. This group of participants consisted of 6 municipal schools from one municipality, 196 students from 5–9th grades (boys – 98, girls – 98), age M = 13.71 SD = 1.19. Even 46 of them answered that they had classmates with disabilities in general physical education classes.

Construct validity

The Exploratory Factor Analysis (EFA) was conducted aiming to understand the structure of a set of variables of the Lithuanian version of CAIPE-R questionnaire and the Confirmatory Factor Analysis (CFA) was conducted in order to test the suitability of the structural models of instrument scales of CAIPE-LT. The scale items in the tables (Table 14, Table 15) and figures (Figure 13) are designated with numerical labels for facilitating orientation throughout the manuscript.

EFA. First principal component analysis (PCA) was performed for the scale of ID on 11 items. The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis and KMO index which was .90, and all KMO values for individual items were > .88, which is above the acceptable limit of .50. Bartlett's test of sphericity X^2 (55) = 2888.10, p < .001, indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component in the data. Two components had eigenvalues over Kaiser's criterion of 1 and in combination with explained 52.08% of the variance (Table 14). Table 14 shows the factor loadings after rotation. The first factor consisted of six items and the second factor consisted of five items. For factors loadings, see Table 14. Judging by the items' content, the first factor was comprised of items describing general attitude subscale about attitudes towards inclusive regular PE classes and the second factor included items describing sport modification attitude subscale (Table 14).

Second PCA was performed for the scale of PD on 11 items. The KMO measure verified the sampling adequacy for the analysis and KMO index which was .92, and all KMO values for individual items were > .90, which is above the acceptable limit of .50. Bartlett's test of sphericity X^2 (55) = 3965.93, p < .001, indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component in the data. Two components had eigenvalues over Kaiser's criterion of 1 and in combination explained 54.56% of the variance (Table 14). Table 14 shows the factor loadings

after rotation. The first factor consisted of six items and second factor consisted of fife items. For factors loadings, see Table 14. Judging by the content of items, the first factor included items describing general attitude subscale about attitudes towards inclusive regular PE classes and the second factor included items describing attitudes towards sport modification (Table 14). In addition, to assess the fit of the factor models, we examined the differences between the model-based correlations and the observed correlations. There were 32 (48.0%) non-redundant residuals with absolute values greater than .05.

Third PCA was performed for the scale of VI on 11 items. The KMO measure verified the sampling adequacy for the analysis and KMO index which was .93, and all KMO values for individual items were > .90, which is above the acceptable limit of .50. Bartlett's test of sphericity X^2 (55) = 4703.89, p < .001, indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component in the data. Two components had eigenvalues over Kaiser's criterion of 1 and in combination explained 58.86% of the variance (Table 14). Table 14 shows the factor loadings after rotation. The first factor consisted of six items and second factor consisted of five items. For factors loadings, see Table 14. Judging by the content of items, the first factor included items describing general attitude subscale about attitudes towards inclusive regular PE classes and the second factor included items describing attitudes towards sport modification (Table 14). In addition, to assess the fit of the factor models, we examined the differences between the model-based correlations and the observed correlations. There were 27 (49.0%) non-redundant residuals with absolute values greater than .05.

		Varimax components						
Subscale	Number of Item	F	1 loadin	gs	F2 loadings			
	Item	ID	PD	VI	ID	PD	VI	
	1	.65	.71	.72				
	2				.41	.57	.67	
Comonal attituda	3	.77	.78	.75				
General attitude	4	.71	.76	.78				
	5	.64	.68	.77				
	6	.61	.72	.73				
	7	.68	.73				.67	
	8				.61	.73	.73	
Sport modification	9			.68	.82	.64		
	10				.61	.74	.76	
	11				.52	.56	.57	
Eigen value		4.13	4.92	5.32	1.08	1.09	1.16	
% Variance		41.27	44.69	48.34	10.81	9.86	10.52	
Cum. % Variance		41.27	44.69	48.34	52.08	54.56	58.86	

Table 14. Factor structures of the CAIPE-LT on ID, PD, VI scales by ExploratoryFactor Analysis (n = 1008)

CFA. CFA was performed according to EFA distinct parameters. The model parameters were estimated with a sample of 1008 subjects in every scale. Figure 13 (A, B, C) represents the factor structure for CAIPE-LT of each scale with two dimensions defined. To improve the model-data fit, the Amos 23.0 software automatically created a *modification index*, which suggested several variables to be correlated. The results of the CFA and path diagram can be seen in Figure 13 (A, B, C in parts).

CFA analysis of ID scale was performed on the basis of 11 items, two-factor model. The overall model fit appears quite good. χ^2 (*df* = 38) 108.66, (*p* = .000); RMSEA values .043 are considered to reflect good fit to the model; a large CFI of .963 and NFI of .975 indicate a good fit of this model (Figure 13 part A).

CFA analysis of PD scale was performed on the basis of 11 items, two-factor model. The overall model fit appears quite good. χ^2 (*df* = 37) 114.79, (*p* = .000); RMSEA values below .046 are considered to reflect good fit to the model; a large CFI of .980 and NFI of .971 indicate a good fit of this model (Figure 13 part B).



Figure 13. Path diagram of the Intellectual disability scale, Physical disability scale, and Visual impairment scale

CFA analysis of VI scale was performed on the basis of 11 items, two-factor model. The overall model fit appears quite good. χ^2 (df = 33) 96.27, (p = .000); RMSEA values below .044 are considered to reflect good fit to the model; a large CFI of .986 and NFI of .980 indicate a good fit of this model (Figure 13 part C).

Reliability evidence

Cronbach's alpha reliability for all items in each of the scales was good in all cases: α for ID scale (11 items) = .83 (M = 3.11; SD = .53), α for PD scale (11 items) = .87 (M = 3.09; SD = .62) and α for VI scale (11 items) = .89 (M = 3.09; SD = .67). The descriptive statistics (mean and standard deviation) and Cronbach's reliability coefficients of CAIPE-LT version instrument items and each of the scale (ID, PD, VI) subscales are presented in Table 15: General attitude subscale (six general attitude items about inclusion in physical education classes) and Sport modification subscale (five items related to rule modification that would accommodate student with disability).

Subseele	Statements	$M \perp \Omega D$	
Subscale	Intellectual disability	$M \pm SD$	ά
	1. It would be OK having [Pseudonym] come to my PE class.	$3.12 \pm .85$	
	3. If we were playing a team sport such as football, it would be OK having [Pseudonym] on my team.	$2.93\pm.96$	
Comment	4. It would be fun if [Pseudonym] was in my PE class	$2.86\pm.90$	
attitude	5. If [Pseudonym] were in my PE class, I would talk to him and be his friend	$3.28\pm.81$.82
	6. If [Pseudonym] were in my PE class, I would like to help him practice and play the games.	$3.14\pm.88$	
	7. I would like to pass the ball to [Pseudonym] while playing football.	$2.92\pm.95$	

Table	15.	Descri	ptive	statistics	of scale	items and	d Cronbach	's reliability	n = 1	1008)
									(

Sport modification	2. I would play slower due to [Pseudonym] because he cannot play so fast.	2.58 ± 1.02	
	8. Someone repeatedly has to give short prompts [Pseudonym] to help him to reach right place of the hall.	$3.35\pm.76$	
	9. You should be closer to the [Pseudonym] so that he could pass the ball to you.	$3.50\pm.70$.70
	10. If the ball has been passed to the [Pseudonym], wait until he accepts it.	$3.31\pm.85$	
	11. I would help to create conditions for [Pseudonym] to kick the ball into the gate.	$3.28\pm.82$	
	Physical disability		
	1. It would be OK having [Pseudonym] come to my physical education class.	2.85 ± 1.06	
	3. If we were playing a team sport such as basketball, it would be OK having [Pseudonym] on my team.	2.82 ± 1.00	
a 1	4. It would be fun if [Pseudonym] was in my PE class	$2.91 \pm .92$	
General attitude	5. If [Pseudonym] were in my PE class, I would talk to him and be his friend 3.37 =		.86
	6. If [Pseudonym] were in my PE class, I would like to help him practice and play the games.	$3.09\pm.91$	
	7. I would like to pass the ball to [Pseudonym] while playing basketball	$2.91\pm.97$	
	2. I would play slower due to [Pseudonym], because he cannot play so fast.	2.72 ± 1.07	
	8. When playing the basketball I would agree that [Pseudonym] could throw the ball in a lowered basket.	$3.17\pm.99$	
Sport modification	9. [Pseudonym] could stand in three minutes zone longer (for example 5s instead of 3s).	$3.50\pm.79$.71
	10. Playing basketball nobody should take over the ball from [Pseudonym] when he is passing the ball.	$3.24\pm.93$	
	11. I would help to create conditions for [Pseudonym] to get scores.	$3.38\pm.85$	
	Visual impairment		
General	1.It would be OK having [Pseudonym] come to my PE class.	3.12 ± 1.01	07
attitude	3. If we were playing a team sport such as "Quadrate", it would be OK having [Pseudonym] on my team.	2.94 ± 1.01	.0/

	4. It would be fun if [Pseudonym] was in my PE class.	$2.97\pm.93$	
	5.If [Pseudonym] were in my PE class, I would talk to him and be his friend.	3.30±.87	
	6.If [Pseudonym] were in my PE class, I would like to help him practice and play the games	3.10±.95	
	9.I would hold [Pseudonym] hand and would say prompts /warnings.	2.74 ± 1.06	
	2.I would play slower due to [Pseudonym], because he cannot play so fast.	2.80 ± 1.04	
Sport modification	7. I would agree to play with "sound" ball while playing "Quadrate".	$3.59\pm.80$	
	8. Playing "Quadrate", the ball should be rolled when someone wants to punch [Pseudonym].	$2.99{\pm}~1.09$.80
	10.I would agree that [Pseudonym] should not be punched with a ball while standing near the line.	3.14 ± 1.03	
	11.I would help [Pseudonym] to through a ball.	$3.29\pm.95$	

A repeated interview with the same respondents was done after 14 weeks to retest the stability of the (sub)scale. The Spearman-Brown correlation coefficient of scales and subscales for assessing test-retest reliability was > .70, correlation coefficients of each subscale are shown in Table 16.

Scale	Subscale	I study	II study	Spearman-Brown (Test-retest)
		α	α	r
ID	General attitude	.81	.84	.78
ID	Sport modification	.65	.75	.77
PD	General attitude	.81	.85	.79
	Sport modification	.75	.82	.77
VI	General attitude	.84	.87	.83
	Sport modification	.71	.80	.82

Table 16. The indicators of subscale stability of students' attitudes towards inclusion and attitudes to game changes in the case of re-examination (n = 196)

3.2. Situation studies of physical education teachers' self-efficacy and children's attitudes towards inclusive physical education

3.2.1. The situation study of physical education teachers' self-efficacy towards including students with intellectual, physical and visual disabilities in the general physical education classes

Ninety one PE teachers participated in the electronic survey and 426 PE teachers filled in the paper-based questionnaires. Five hundred and seventeen teachers of physical education (187 men and 330 women), age from 21 to 65 years old (M = 46.93; SD = 8.99) from 397 general education schools in 40 municipalities were included in the analysis of the situation of physical education teacher self-efficacy beliefs towards inclusion of students with intellectual disability, physical disability and visual impairment in the general education classes (Table 17). The average yearly work experience of physical education teachers was from 1 to 45 years, M = 21.71; SD = 9.63.

Factors		Frequency	Percentage
Gender:	Males	187	36.1
	Females	330	63.83
Had undergraduate or graduate APE courses:	Yes	112	21.66
	No	405	78.34
Had undergraduate or graduate Special			
Education courses:		233	45.07
	Yes	284	54.93
	No		
Had included students with ID in PE class:	Yes	182	35.20
	No	335	64.80
Had included students with PD in PE class:	Yes	170	32.88
	No	347	67.12
Had included students with VI in PE class:	Yes	140	27.08
	No	377	72.92

Continued

Had support from an A	APE specialist:	Yes	83	16.05
		No	378	73.11
		Don't	56	10.84
		know		
Had support from Teac	cher assistants:	Yes	70	13.54
		No	373	72.15
		Don't	74	14.31
		know		
Had support from a Sp	ecial Education Teacher:	Yes	84	16.25
		No	194	37.52
		Don't	238	46.23
		know		
Had support from a Ph	ysical therapist:	Yes	73	14.12
		No	397	76.79
		Don't	47	9.09
		know		
Had support from a Psychologist*:		Yes	266	51.45
		No	219	42.36
		Don't	32	6.19
		know		
Personal experiences w	ith individuals with ID			
	No experience		454	87.81
	Friend		45	8.70
	Family member		18	3.49
Personal experiences w	ith individuals with PD			
	No experience		413	79.88
	Friend		77	14.89
	Family member		27	5.23
Personal experiences w	ith individuals with VI			
-	No experience		439	84.91
	Friend		68	13.15
	Family member		10	1.94

Note. ID = intellectual disability, PD = physical disability, VI = visual impairment, APE = adapted physical education; M = average; SD = standard deviation; * = teachers while answering the question "Do you get the support from other specialists" indicated psychologist support as support from other specialist.

The analysis of the data showed that the self-efficacy of the physical education teachers involved in the study was moderate; the highest level of self-efficacy was specified towards inclusion of students with intellectual disabilities, and the least towards including students with visual impairments (Table 18).

		Self-efficacy		
Facto	Factors		PD	VI
		$M(SD) p^*$	M SD p^*	M SD p^*
Gender				
	Males	3.34 (.72)	3.12 (.80)	3.02 (.86)
	Females	3.35 (.79)	3.09 (.88)	2.92 (.98)
Had undergraduate or g	graduate APE			
courses	-	3.48 (.77)	3.39 (.82)	3.35 (.89)
	Yes	3.31 (.76) *	3.06 (.85)*	2.85 (.92) *
	No			
Had undergraduate or g	graduate Special			
Education courses		3.35 (.79)	3.15 (.88)	3.02 (.99)
	Yes	3.34 (.75)	3.12 (.84)	2.91 (.89)
	No			
Had included students v	vith disability in PE			
class		3.40 (.76)	3.23 (.85)	3.22 (.83)
	Yes	3.32 (.77)	3.09 (.86)*	2.86 (.96) *
	No			
Had support from an A	PE specialist			
	Yes	3.59 (.66) _{2 *}	3.46 (.80)	3.40 (.87)
	No	3.31 (.78) ⁺	[*] ¹ ر3.06 (.86)	2.87 (.95)
	Don't know	3.38 (.78)	3.25 (.82)	3.06 (.80)
Had support from Teac	her assistants			
	Yes	3.46 (.67)	. ד(79) 3.33	3.13 (.84)
	No	3.30 (.78)	3.09 (.86) [*	2.91 (.95)
	Don't know	3.35 (.78)	3.18 (.87)	3.06 (.99)
Had support from a Spe	ecial Education			
Teacher		3.41 (.67)	3.23 (.81) ₁	3.07 (.83) 1
	Yes	3.27 (.79)	3.06 (.92) -*	2.83 (.96)
	No	3.35 (.78)	3.03 (.81)	2.94 (.96)
	Don't know			

Table 18. The results of physical education teachers' self-efficacy level

Continued

Had support from a Phy								
	Yes	3.50 (.64)		3.49 (.85)				
	No	3.29 (.79)	3.05 (.87)	2.86 (.95)				
	Don't know	* گر(71.) 3.57	3.28 (.62)	3.14 (.76)				
Had support from a Psy	chologist ¹							
	Yes	3.49 (.74)	3.30 (.85)	3.02 (.89)				
	No	3.28 (.81)	3.10 (.88)	2.87 (.99)				
	Don't know	3.39 (.72)	3.14 (.74)	3.01 (.88)				
Personal experiences wi	th individuals with							
disability		. ב(.77) 3.31	.188) 3.08 (.88)	2.91 (.93)ر _				
	No experience	3.71 (.53) [∫] *	3.41 (.72)	3.25 (.93) ^Γ *				
	Friend	3.38 (.90)	3.22 (.71)	3.05 (1.01)				
	Family member							
	Total	3.35 (.77)	3.14 (.86)	2.96 (.94)				

Note. ID = intellectual disability; PD = physical disability; VI = visual impairment; APE = adapted physical education; M = average; SD = standard deviation; ¹= teachers while answering the question ,,Do you get the support from other specialists" indicated psychologist support as support from other specialist;*= statistically significant differences between indicated groups using nonparametric method Mann-Whitney, p < .05.

Analysing the data, it was observed that in response to the question in the demographic section "Did you have the APE course/seminars during your studies or after graduation?" there were statistically significant differences between self-efficacy of those teachers who had the course of APE and those who did not have those courses/seminars (Table 18).

A significant difference was found between the self-efficacy of the teachers who had experience in the inclusion of students with physical disabilities and visual impairments in the general class activity and those who did not have it (Table 18).

Analysing the data, it was observed that self-efficacy of those teachers who got the support from adapted physical activity specialists, teachers' assistants, physiotherapists, special educators, psychologists was significantly higher than that of those who had no support from such specialists (Table 18).

Self-efficacy towards including students with disabilities into general PE class of those teachers who had personal experience with their friends with intellectual and visual disabilities was higher than that of those who had no such personal experience (Table 18).

Aiming at establishing the relationship between the level of self-efficacy and the support received from specialists when including students with disabilities in the activities of a physical education class, a correlation was calculated. The Spearman rank correlation coefficients between the level of self-efficacy and the support received from the adapted physical activity specialist, the teacher's assistant, and the physiotherapist were weak but statistically significant (Table 19).

			Scale	es		
APE	II)	PD)	V	[
	r	р	r	р	r	р
APE course/seminars	.088*	.041	.152**	.001	.224**	.000
Inclusion of students with disability	_	_	_	_	.153**	.000
Personal experience with disability	.125**	.004	.130**	.003	.126**	.004
Support from an APE specialist	.107**	.015	.138**	.002	.148**	.001
Support from teacher assistants	_	_	_	_	.097*	.027
Support from a physical therapist	.116**	.009	.160**	.009	.182**	.000

 Table 19. The results of correlation relations between self-efficacy level scales and demographic indicators

Notes. ID = intellectual disability; PD = physical disability; VI = visual impairment; APE = adapted physical education; r – Spearman rank correlation coefficient; p – level of significance, statistically significant result $p < .05^*$ and $p < .01^{**}$; – = no significant difference.

The correlation results allowed the assumption that the support received from adapted physical activity specialist, the teacher's assistant and the physiotherapist positively affected the physical education teacher's self-efficacy towards including students with disabilities into general physical education class activities.

A stepwise multiple regression analysis was used to explore the ability of demographic factors to predict levels of SE. Regression analysis using ID scales data revealed that the teachers' self-efficacy depended on the APE course or seminars they had during their studies or after graduation, the physiotherapist's support when including students with an ID in the general PE classes and having personal experience with persons with ID. Results of a multiple regression analysis for the ID scale data showed significant models: R = .152, $R^2 = .023 F (3, 516) =$ 6.082, p = .002, and Cohen's $f^2 = .023$, which indicated a small effect size. Regression analysis using the data of PD scales revealed that the teachers' selfefficacy depended on the APE course or seminars they had during their studies or after graduation, the physiotherapist's support in including students with an PD in the general PE class and having personal experience with persons with PD. Results of a multiple regression analysis for the data of the PD scale showed significant models: R = .222, $R^2 = .049 F (3, 516) = 8.881$, p = .000, and Cohen's $f^2 = .052$. which indicated a small effect size. Regression analysis using data of VI scales revealed that the teachers' self-efficacy depended on the APE course or seminars they had during their studies or after graduation, the physiotherapist's support in including students with VI in the general PE classes and having experience of including students with VI into general physical education classes. Results of a multiple regression analysis for the data of VI scale showed significant models: $R = .287, R^2 = .082 F (3, 516) = 15.364, p = .000$, and Cohen's $f^2 = .089$, which indicated a small effect size.

3.2.2. The situation study about physical education teachers' self-efficacy towards including students with autism spectrum disorders in the general physical education classes

Four hundred and four PE teachers filled in the paper-based survey. This sample included a total of 404 PE teachers from 29 municipalities who participated in the survey. Participants' age ranged from 21 to 65 years (M = 47.28; SD = 8.51); gender distribution was 162 males (M = 45.99; SD = 10.26) and 242 females (M = 48.15; SD = 7.86). Participants had general PE teaching experience ranging from 1 to 45 years (M = 22.09; SD = 9.79).

Level of PE teachers' SE for the inclusions of students with ASD into general PE classes was M=5.30 SD=2.14 (Table 20). Results of demographic factors showed that higher SE level was in those PE teachers who: had APE course M = 5.93 SD = 2.24, effect size Hedges' g = .38; had included students with ASD in regular PE class M = 5.80 SD = 1.97, effect size g = .47; had support from APE specialist M = 5.86 SD = 1.97, effect size g = .32, had support from physical therapist M = 6.27 SD = 2.0, effect size g = .54 and had support from a psychologist M = 6.04 SD = 1.74, effect size g = .51 (p < .05; Table 20). Also we found that PE teachers who had a friend with ASD had higher SE M = 6.10 SD = 1.81 than PE teachers who did not have these personal experiences (friends or family member) M = 5.25 SD = 2.16 (effect size g = .40, p < .05; Table 20).

			Self-efficacy
Demographic factors/Personal attributes		Percentage	Mean (<i>SD</i>) * (<i>p</i> < .05)
Gender			
Males	162	40.10	5.37 (2.04)
Females	242	59.90	5.26 (2.21)
Had undergraduate or graduate APE courses			
Yes	86	21.29	5.93 (2.24)
No	318	78.71	5.13 (2.09)
Had undergraduate or graduate Special Education courses			
Yes	204	50.50	5.49 (2.21)
No	200	49.50	5.11 (2.06)
Had included students with ASD in PE class			
Yes	199	49.26	5.80 (1.97)
No	205	50.74	4.82 (2.20)
Had support from and APE specialist			
Yes	43	10.64	5.86 (2.44)
No	287	71.04	5.19 (2.03)
Don't know	78	18.32	5.42 (2.32)
Had support from Teacher assistants			
Yes	60	14.85	5.68 (2.02)
No	287	71.04	5.19 (2.12)
Don't know	57	14.11	5.46 (2.34)
Had support from a Special Education			
Teacher	189	46.78	5.49 (2.10)
Yes	163	40.35	5.14 (2.11)
No	52	12.87	5.12 (2.36)
Don't know			
Had support from a Physical therapist			
Yes	37	9.16	6.27 (2.03)
No	303	75.00	5.13 (2.12)
Don't know	64	15.84	5.56 (2.18)

Table 20. PE teachers' self-efficacy level by demographic factors, other personal attributes, and mastery, vicarious and social persuasion experiences

Had su	Had support from a Psychologist								
	Yes	25	6.19	6.04 (1.74)					
	No	162	40.10	4.97 (2.15) 「 *					
	Don't know	217	57.71	5.46 (2.15)					
Personal experiences with ASD									
	No experience	372	97.08	5.25 (2.16)					
	Friend	29	7.18	6.10 (1.81)					
	Family member	3	.74	3.47 (.74)					
1.	ME, VE & SP	124	30.69	▶ 5.91 (1.90)					
2.	ME &VE	27	6.68	5.53 (2.29)					
3.	ME & SP	23	5.69	★ 6.03 (1.73)					
4.	VE &SP	4	.99	* 4.55 (3.00)					
5.	ME only	54	13.37	▶ 5.10 (1.80)					
6.	VE only	23	5.69	▶ 5.22 (2.16)					
7.	SP only	6	1.49	6.07 (2.57)					
8.	ME, VE & SP did not have	143	35.40	4.69 (2.29)					
Total		404		5.30 (2.14)					

Notes. APE = Adapted physical education; ASD = Autism Spectrum Disorder; PE = physical education; ME = mastery experience; VE = vicarious experience; SP = social persuasion; SD = standard deviation.

Statistically significant differences were found between SE of PE teachers who had only one mastery experience (M = 5.10 SD = 1.80) and SE of PE teachers who had all three (ME, VE, SP) experiences (M = 5.91 SD = 1.90), effect size Hedge's g = .43 (p < .05); between SE of PE teachers who had only one ME (M = 5.10 SD = 1.80) and ME and SP experiences (M = 6.03 SD = 1.73), effect size Hedge's g = .52 (p < .05); between SE of PE teachers who did not have any of ME, VE, SP experience (M = 4.69 SD = 2.29) and SE of PE teachers who had all the aforementioned experiences (M = 5.91 SD = 1.90), effect size Hedge's g = .58(p < .05); between SE of PE teachers who did not have any of ME, VE, SP experience (M = 4.69 SD = 2.29) and those SE of PE teachers who had both ME and SP experiences (M = 6.03 SD = 1.73), effect size Hedge's g = .60 (p < .05) (Table 20).

Spearman's rank correlation coefficient was used to determine the strength of links between the score of SE and demographic factors as well as other personal attributes. Results (n = 404) showed that relationships between SE level and having APE course was weak (r = .136) and statistically significant (p < .01). Results

(n = 404) showed that relationships between SE levels and inclusion of students with ASD in general PE class was weak (r = .225) and statistically significant (p < .01). The correlation between the level of SE and such demographic variables as gender, age, years of experience teaching physical education, having special education course, was weak and not statistically significant.

Second correlation analysis was used to determine the strength of links between all scales (SE, ME, VE, SP, PS, BEH and PCH). Correlation analyses were carried out with a total sample of PE teachers (n = 404) and separately with a subsample of participants such as PE teachers who had all three (ME, VE, SP) experiences (n = 124), PE teachers who had one or two experiences (ME, VE, SP) (n = 137), and PE teachers who had no experience (n = 143). The calculated coefficients between scales showed that in most cases the relations were weak and moderately strong and statistically significant (Table 21).

Subsample	Variable	M (SD)	1	2	3	4	5	6	7
	1. Self-efficacy	6.04 (1.86)	_	.57**	.50**	.35**	32**	.41**	32**
Had all three (ME, VE, SP) experiences (n = 124)	2. Mastery experience	3.11 (.89)		_	.72**	.62**	23**	.52**	30**
	3. Vicarious experience	2.98 (.94)			_	.54**	15	.47**	35**
	4. Social persuasion	3.56 (1.00)				_	20*	.52**	35**
	5. Physiological state	2.69 (1.07)					_	26**	.43**
	6. Behaviour	3.71 (.84)						_	29**
	7. Perceived challenges	3.14 (.73)							_
Had one or	1. Self-efficacy	5.39 (2.02)	_	.37**	.12	.18*	29**	.22*	36**
two experiences from three (ME, VE, SP)	2. Mastery experience	2.21 (1.45)		_	_ .23**	05	34**	.58**	35**
	3. Vicarious experience	1.16 (1.58)			_	_ .30 ^{**}	.02	05	05
experiences $(n = 137)$	4. Social persuasion	.75 (1.48)				_	.05	.11	08

 Table 21. Means, standard deviations and correlations of scales by different groups of sample size

Continued									
	5. Physiological state	2.96 (1.06)					_	21*	.40**
	6. Behaviour	2.87 (1.42)						_	25**
	7. Perceived challenges	3.37 (.86)							_
	1. Self-efficacy	4.69 (2.29)	_	_	_	_	25*	.23**	21*
	2. Mastery experience	_		_	_	_	_	_	_
Had no	3. Vicarious experience	_			_	_	_	_	_
experiences (ME, VE, SP) (<i>n</i> = 143)	4. Social persuasion	_				_	_	_	_
	5. Physiological state	3.31 (1.21)					_	19*	.41**
	6. Behaviour	1.06 (.45)						_	11
	7. Perceived challenges	3.56 (1.09)							_
	1. Self-efficacy	5.30 (2.14)	_	.36**	.28**	.27**	31**	.32**	33**
	2. Mastery experience	1.70 (1.63)		_	.55**	.61**	30**	.81**	31**
T-4-1	3. Vicarious experience	1.31(1.61)			_	.59**	18**	.56**	24**
Total sample size (n = 404)	4. Social persuasion	1.35 (1.82)				_	19**	.61**	25**
	5. Physiological state	3.00 (1.14)					_	29**	.43**
	6. Behaviour	2.49 (1.48)						_	30**
	7. Perceived challenges	3.37 (.93)							_

Note. SE = Self-efficacy; ME = mastery experience; VE = vicarious experience; SP = social persuasion; M = mean; SD = standard deviation; ** = correlation is significant at the .01 level; * = correlation is significant at the .05 level.

To explore what demographic factors/personal attributes and what sources of self-efficacy (ME, VE, SP, PS) influenced the levels of SE in including students with ASD in PE class, stepwise multiple regression analyses were performed (Table 22).

A second stepwise multiple regression analysis was performed to determine the ability of SE and perceived challenges to predict behaviours of PE teachers in regard to the inclusion of students with ASD (Table 22).

Subsample	Variable	Predictors	R ²	F	df	р	Effect size Cohen's <i>f</i> ²
Total sample size $(n = 404)$	SE	Had students with ASD in PE class x had APE course or seminar	.066	14.24	2; 403	.000	.07
	SE	ME x PS x VE	.193	31.84	3; 403	.000	.24
	BEH	SE x PCH	.135	31.36	2; 403	.000	.16
Had all three (ME, VE, SP)	SE	ME x PS x VE	.400	26.64	3; 123	.000	.60
experiences $(n = 124)$	BEH	SE x PCH	.222	17.26	2; 123	.000	.29
Had one or two experiences from	SE	PS x SP x VE x ME	.285	13.16	4; 136	.000	.40
three (ME, VE, SP) experiences $(n = 137)$	BEH	РСН	.075	10.96	1; 136	.001	.08
Had no experiences (ME, VE, SP) (n = 143)	BEH	SE	.051	7.62	1; 142	.007	.05

Table 22. Results of stepwise regression on the prediction of PE teachers' self-efficacy and behaviour in regard to the inclusion of students with ASD in PE classes

Note. SE = Self-efficacy; ME = mastery experience; VE = vicarious experience; SP = social persuasion; PS = physiological state; BEH = behaviour; PCH = perceived challenges; APE = Adapted physical education; ASD = Autism Spectrum Disorder; R^2 = a squared multiple correlation for the regression equation; F = Fisher's criterion, df = degrees of freedom; p = model is significant at the .05 level; f^2 = Cohen's coefficient for effect size

Based on correlation and multiple regression analysis results, a path model was developed to capture the most plausible theory of change linking proximity to the self-efficacy, sources of self-efficacy, behaviour and challenges (Figure 14). This path model was developed using n = 124 sample size (PE teachers who had all three sources). Estimated weights, correlations between standard errors and R^2 for standardized regression of traits are presented in Figure 14. The standardized regression weights represent the amount of change in the dependent variable that is attributable to a single standard deviation unit's worth of change in the predictor variable (Figure 14). It is estimated that the predictors of SE explain 36 percent $(R^2 = .360)$, the predictors of BEH explain -11.6 percent ($R^2 = .116$), and the predictors of PCH explain 13.1 percent ($R^2 = .131$) of its variance. To improve the model-data fit, the Amos software automatically created a 'modification index', which suggested several errors (residuals, designated as an e + number in Figure 14) to be correlated. A chi-square probability value greater than .05 indicates acceptable model fit: chi-square (χ^2) (7) = 13.23 p = .067. The other goodness of fit measures also demonstrated an acceptable model fit. In the evaluated model, NFI = .958 and CFI = .979 exceeded the .90 cut-off criteria. The RMSEA = .085 demonstrated moderate fit to the model (Figure 14). The results confirmed that ME and VE were some of the strongest sources which affect SE. This SE level makes strong influence to BEH and PCH. Results also show that ME and VE influence to SE level is stronger when including verbal/social persuasion. Noticeable fact is that BEH affects PCH as well.



Note. \rightarrow = standardized regression weights; \leftrightarrow = correlations; R²= a squared multiple correlation for the regression equation; e = error variance; SE=Self-efficacy; ME = mastery experience; VE=vicarious experience; SP = social persuasion; PS = physiological state; BEH=behaviour; PCH=perceived challenges; ***, ** and * = standardized total path coefficients of paths are significant at .001, .01 and .05 level of probability.

Figure 14. Path model fitted (n = 124)

Chi-square (χ 2) p value was calculated in order to find the differences of responses to PCH scale statements between PE teachers who had the experience of including students with ASD into regular PE class during the last 5 years (n = 199), and PE teachers who had no such experience (n = 205). PE teachers, who had students with ASD in their classes, assessed the challenges in terms of the challenges faced by including students with ASD into the classes. PE teachers who had no children with ASD in their PE classes assessed the challenges they would face if they were to include children with ASD into the class. The percentage frequency of challenges most often faced by teachers delivering an inclusive PE class and the extent at which these challenges affect the inclusion of students with ASD into a general PE class were summarized in Table 23. For example, PE teachers who had students with ASD in their classes as well as those who had not, most often assessed the challenge "I have large class size" as "Somewhat of an issue" and "Very much an issue" (Table 23).

	Item of variant						
Items of Perceived challenges scale	PE teachers' group	Not at all an issue (%)	Not much of an issue (%)	Sometimes an issue, sometimes not an issue (%)	Somewh at of an issue (%)	Very much an issue (%)	$\chi^2 * (p <. 05)$
I am not sure	Including	13.57	22.61	42.21	15.58	6.03	
how to modify activities	Not including	11.22	15.12	26.34	24.39	22.93	34.56*
I do not have	Including	16.58	24.12	30.15	23.12	6.03	
time to make modifications	Not including	9.76	21.46	24.88	24.88	19.02	18.56*
I do not have	Including	12.56	19.10	25.13	31.16	12.06	
appropriate equipment	Not including	7.32	12.20	23.41	27.32	29.76	21.55*
I have large class	Including	8.04	12.56	21.11	25.63	32.66	3.06
sizes	Not including	7.32	9.27	17.56	26.34	39.51	5.00
There are	Including	7.04	12.06	18.09	27.14	35.68	
multiple classes in the gym	Not including	7.80	7.80	16.59	26.34	41.46	2.96
The student's	Including	9.05	16.58	33.17	27.64	13.57	
skill level is very different than that of peers in the class	Not including	5.37	11.71	26.34	32.20	24.39	12.09*
I have no aid or	Including	7.54	19.10	24.62	34.17	14.57	21.62*
support to help	Not including	5.85	9.27	23.90	28.78	32.20	21.05
I do not have	Including	17.09	21.61	29.65	20.60	11.06	
information about the student	Not including	8.29	16.10	20.00	31.22	24.39	26.07*
I have limited	Including	15.58	16.08	28.14	26.63	13.57	
training on autism	Not including	5.37	14.63	18.54	32.20	29.27	26.89*
The student has	Including	6.03	17.59	33.67	33.67	9.05	
behavioural problems	Not including	5.85	10.73	25.37	34.15	23.90	19.18*
The student has	Including	9.05	21.61	34.17	25.13	10.05	
problems staving on task	Not including	8.29	16.59	22.93	28.78	23.41	17.10*

 Table 23. Percentage distribution of responses to perceived challenges scale statements

 by PE teachers' experience of including students with ASD in regular PE classes

Note. In this table, PE teachers are divided into two groups according to whether or not they had students with ASD included in their classes. PE teachers had to choose from eleven situations "Items of Perceived Challenges", which can make them most difficult to successfully include students with autism spectrum disorders in general physical education classes. PE teachers evaluated ("Not at all an issue", "Not much of an issue", "Sometimes an issue, sometimes not an issue", "Somewhat of an issue", "Very much an issue"), how each of the described situations "Items of Perceived Challenges" personally complicate the possibility to include students with autism spectrum disorders in a general physical education class meaningfully. "Items of variants" in the table are presented in percentages, how many PE teachers have chosen every assessment option. χ^2 = Chi-square.

3.2.3. The situation study about students' attitudes towards including peers with disabilities into general physical education classes

As 1583 students from 5-9th grades (812 boys and 771 girls) aged from 10 to 16 years old (M = 13.06 SD = 1.35) from 34 general education schools of 9 municipalities were involved in the study. The information about demographic statistical data of the sample is provided in Table 24.

Factors		Frequency	Percentage
Gender			
	Male	812	51.30
	Female	771	48.70
* Level of competitiv	veness		
	Very competitive	288	18.19
	Somewhat competitive	961	60.71
	Not competitive	334	21.10
Had a family membe	er or friend with disability		
-	Yes	267	16.87
	No	1316	83.13
Had peers with disal	bilities in a regular education clas	s	
-	Yes	420	26.53
	No	1163	73.47
Has peers with disab	oilities in a physical education clas	55	
•	Yes	386	24.38
	No	1197	75.62

 Table 24. The statistical demographic data of the sample

Notes.* – Very competitive (I like to win, and I get very upset if I lose); Somewhat competitive (I like to win, but it is OK if I lose sometimes); Not competitive (It really doesn't matter to me if I win or lose; I just play for fun).

The analysis of the data of ID, PD and VI scales about students' attitudes towards including disabled peers in the general physical education class (Table 25) showed that the average score of the students' attitudes towards their peers with ID, PD, and VI was 3, based on the scale of the questionnaire scores, which corresponds to the statement *probably yes*. Based on this result, the students' attitudes towards the inclusion of peers with disabilities in the general physical education class tend to be positive, but the students are not sure about it, they doubt whether they would act the same way as they think. Analysing the data from *General attitude* and *Sport modification attitude* subscales (Table 25), it was noticed that the score of *General attitude* scale was more negative and the score of *Sport modification attitude scale* tended to be more positive. The difference between *General attitude* and *Sport modification attitude* subscale scores was statistically significant (Table 25). Based on this data, we can assume that students are not positive about the inclusion of students with a disability in their physical education class, but when asked about game changes, their attitude becomes more positive, that is, changes made during the game increase interest in them, and at the same time change their perspective to the positive side. Comparing the data, the statistically significant differences between the scale scores are as follows: the higher the score of the attitude in the ID scale, the lower the score in the VI scale (Table 25).

Scale	Subscale	$M \pm SD$	р	Total score M ± SD	<i>p</i> * ^{1,2,3}
ID	General attitude	$2.97\pm.68$	000	2.05 + 57	*1. *2
ID	Sport modification	$3.15\pm.57$.000	$3.05 \pm .57$	~-, ~-
DD	General attitude	$2.92\pm.75$	000	2.02 + 65	41 43
PD	Sport modification	$3.16\pm.66$.000	$3.03 \pm .65$	*1,*0
VI	General attitude	$2.94\pm.79$	000	$2.00 \pm .71$	*2.*3
	Sport modification	$3.09\pm.74$.000	$5.00 \pm .71$	~2, x o

Table 25. Statistical data of CAIPE – LT instrument scales and subscales

Note. *1,*2,*3 – significance level p, statistically significant difference between scales, when $p \leq .05$.

When analysing the students' attitudes towards inclusion of their disabled peers in the general physical education classes, the answers to the questions in demographic part of the questionnaire revealed statistically significant differences in attitude indicators between: girls and boys, those who had peers with disabilities included in the physical education classes and those who did not, those who had peers with disabilities included into other classes or not (Table 26). The girls' attitudes towards inclusion of peers with disabilities were more positive than those of boys (p < .05), the students who had no experience of inclusion of peers with disabilities in the general physical education and other classes had more positive attitude compared to those who had that kind of experience (p < .05). It was also

found that the students' attitudes depended on the levels of competitiveness (Table 26). Those students who always wanted to win and suffer from the defeat, negatively rated the inclusion of students with disabilities in the sports games. Statistically significant differences were found between groups of students who were very competitive and fairly competitive, and also between very competitive and not competitive students in the ID and PD scales (Table 26).

	Factors	General attitude	Sport modification	Total
		$M(SD) p^*$	$M(SD) p^*$	$M(SD) p^*$
	Gender:			
	Male	ב(.72) 2.84.	. 3.07 (.61)	2.94 (.61) <u>1</u> *
	Female	3.10 (.61)	[*] ل 3.25 (.51)	3.17 (.51) [*]
	Level of competitiveness:			
	<i>Very competitive</i>	2.94 (.70)	ر(.57) 3.11 ⊾	3.02 (.58)
	Fairly competitive	2.97 (.65)	3.17 (.52) *	3.06 (.53)
	Not competitive	2.98 (.75)	لر 3.15 (.75)	3.05 (.67)
	Had a family member or close friend who had a disability			
Ξ	Yes	2.99 (.67)	3.15 (.55)	3.07 (.56)
	No	2.96 (.68)	3.15 (.57)	3.05 (.57)
	Had a student with disabilities in regular education classes			
	Yes	ר(70.) 2.87	ד(.58) 3.11	ר(60.) 2.98
	No	3.00 (.67)	* 3.17 (.56)	3.08 (.56)
	Had a student with disabilities in physical education classes			
	Yes	ר(69.) 2.90	ר(59.) 3.12	ר(59.) 3.00
	No	2.99 (.67)	* 3.16 (.56) ⁵ *	3.07 (.56)
	Gender:			
	Male	ב (.77) 2.81	3.06 (.72)	2.92 (.69) ไ
	Female	3.04 (.70) ^{∫*}	[*] 3.27 (.57) ^{∫*}	3.14 (.58)
PD	Level of competitiveness:			
	<i>Very competitive</i>	2.88 (.73)	_∗ ∫3.11 (.67) _٦	ر(.62 (.62 ₁
	Fairly competitive	2.93 (.72)	[*]]3.17 (.62) *	3.04 (.61) -*
	Not competitive	2.93 (.82)	لر3.16 (.76)	لر(75) 3.04

 Table 26. The comparison of the students' attitudes by personal attributes according to CAIPE-LT

Continued

	Had a family member or close friend who had a disability			
	Yes	2.99 (.72)	3.17 (.65)	3.07 (.63)
	No	2.90 (.75)	3.16 (.66)	3.02 (.65)
	Had a student with disabilities in regular education classes			
	Yes	2.84 (.76) ב,	3.10 (.70)	2.96 (.68)]*
	No	* لـ (2.95 (.74)	3.18 (.64) [*]	3.05 (.63) ¹
	Had a student with disabilities in physical education classes			
	Yes	2.87 (.77)	3.12 (.69)	2.98 (.67) ي
	No	2.94 (.74) ^{∫*}	3.17 (.65) ^{∫*}	3.04 (.64) ^{∫*}
	Gender:			
	Male	ב ר(82) 2.68 (, ך(81) 2.96	2.81 (.74) ב.
	Female	3.20 (.66) ∫*	3.22 (.64)	3.21 (.60) ∫*
	Level of competitiveness:			
	<i>Very competitive</i>	2.93 (.74)	3.09 (.71)	3.00 (.65)
	Fairly competitive	2.93 (.77)	3.08 (.73)	2.99 (.69)
	Not competitive	2.96 (.87)	3.11 (.80)	3.03 (.71)
	Had a family member or close friend who had a disability			
5	Yes	2.99 (.78)	3.13 (.74)	3.05 (.68)
	No	2.92 (.79)	3.08 (.74)	2.99 (.71)
	Had a student with disabilities in regular education classes			
	Yes	2.87 (.63)	3.02 (.78)	2.93 (.75) 2.4
	No	2.96 (.77) ^{5*}	3.11 (.73) ^{∫*}	3.03 (.69)
	Had a student with disabilities in physical education classes			
	Yes	2.89 (.84) ב	3.02 (.80) L.	2.95 (.76)
	No	2.95 (.77)	3.11 (.72) ^{5*}	3.02 (.69) ∫*

Note. ID = Intellectual disability, PD = physical disability, VI = visual impairment, M = average; SD = standard deviation; *= significance level p, statistically significant difference, when $p \le .05$.

The correlation analysis shows a weak but statistically significant difference between students' attitude scores and personal attributes (Table 27). Correlation analysis of all scales and subscales revealed that the attitude depends on the gender, age (The attitude towards inclusion of peers with disabilities of younger students' is more positive than that of older students), having the experience of inclusion of students with disabilities in the general classes, excluding physical education classes (those students who had no experience of inclusion had more positive attitude then those who had this kind of experience). It was also found that the inclusion of students with ID and VI in the physical education classes had a statistically significant impact on the general negative attitude of students towards inclusion (ID scale) and towards the changes in the sport game needed to include a student with VI in the general game (VI scale) (Table 27). The analysis revealed that lower levels of competitiveness of students had a positive influence on the attitudes of students towards changes in the sport game to include a student with ID and PD into the game (p < .05; Table 27).

				Factors		
Scales/subscales		Gender Age		Inclusion in regular education class	Inclusion in PE class	Competit- iveness
		r	r	r	r	r
	General attitude	.176**	104**	089**	055*	_
ID	Sport modification	.174**	077**	048*	-	055*
	Total	.182**	105**	080**	_	_
	General attitude	.142**	142**	063*	_	-
PD	Sport modification	.141**	200**	058*	_	049*
	Total	.158**	184**	061*	_	054*
	General attitude	.324**	141**	051*	_	_
VI	Sport modification	.140**	184**	057*	053*	_
	Total	.274**	172**	.054*	_	_

Table 27. Spearman's rank correlation between attitude scores and personal attributes

Note. ID = intellectual disability; PD = physical disability; VI = visual impairment; *=p < .05 – the result is statistically significant; **=p < .01 – the result is statistically significant; – there is a relation, but not statistically significant.

A stepwise multiple regression analysis was used to explore the ability of personal attributes to predict levels of attitude.

Regression analysis performed using ID common scales, general attitude, sport modification attitude subscales revealed that students' attitudes were influenced by gender, age, and having peers with disabilities in general education classes. Results of a multiple regression analysis for the ID scale data showed significant models of gender, age and having peers with disabilities in general education classes: total data of ID scale R = .229, $R^2 = .053 F (3, 1582) = 29.252$, p = .000, and Cohen's $f^2 = .056$ which indicated a small effect size; data of general attitude subscale R = .231, $R^2 = .054 F (3, 1582) = 29.804 p = .000$, and Cohen's $f^2 = .057$ which indicated a small effect size; data of sport modification subscale showed significant model of gender and age components R = .172, $R^2 = .030 F (2, 1582) = 24.120$, p = .000, and Cohen's $f^2 = .031$ which indicated a small effect size.

Regression analysis performed using data from PD overall scale, general attitude, sport modification attitude subscales revealed that students' attitudes were influenced by gender, age and having classmates with disabilities in general education classes. Results of a multiple regression analysis for the PD scale data showed significant models of gender, age and having peers with disabilities in general education classes: total data of PD scale R = .247, $R^2 = .061 F$ (3, 1582)= 34.109, p = .000, and Cohen's $f^2 = .065$ which indicated a small effect size; data of general attitude subscale R = .210, $R^2 = .044 F$ (3, 1582) = 24.204 p = .000, and Cohen's $f^2 = .062 F$ (3, 1582) = 34.670, p = .000, and Cohen's $f^2 = .066$ which indicated a small effect size; data of subscale R = .249, $R^2 = .062 F$ (3, 1582) = 34.670, p = .000, and Cohen's $f^2 = .066$ which indicated a small effect size.

Regression analysis performed using data from VI overall scale, general attitude, sport modification attitude subscales revealed that students' attitudes were influenced by gender, age and having classmates with disabilities in general education classes. Results of a multiple regression analysis for the VI scale data showed significant models of gender, age and having peers with disabilities in general education classes: total data of VI scale R = .326, $R^2 = .106 F (3, 1582) = 62.572$, p = .000, and Cohen's $f^2 = .12$ which indicated a small effect size; data of sport modification subscale R = .240, $R^2 = .057 F (3, 1582) = 32.074 p = .000$, and Cohen's $f^2 = .060$ which indicated a small effect size; data of general attitude subscale showed significant model of gender and age components R = .353, $R^2 = .120 F (2, 1582) = 112.664 p = .000$, and Cohen's $f^2 = .14$ which indicated a small effect size.

3.3. The educational experiment: effectiveness of two educational strategies for the development of physical education teachers' self-efficacy creating inclusive learning environment

This study included a convenience sample of 58 volunteer PE teachers and 575 students from grades 5 to 9. The PE teachers' groups were formed for the experiment. Demographic data of the PE teachers' groups are presented in Table 28.

	PE teachers' group			
Demographic factors	Control	Group I	Group II	
	group	18 h	40 h	
n	22	22	14	
Gender Males	9	7	2	
Females	13	15	12	
Age M (SD)	52.73(6.37)	46.27(8.18)	42.71(8.14)	
Teaching experience <i>M</i> (SD)	28.82(8.46)	20.82(7.19)	15.43(8.59)	
Completed APE seminar/course	7	1	4	
Completed Special education	10(Pre)	7	10	
seminar/course	15(Post)			
Experience with students with ID	15	8	5	
Experience with students with PD	9	6	5	
Experience with students with VI	5	5	3	
Experience with students with ASD	18	9	5	

Table 28. Demographic data of the PE teachers' groups

Note. ID = intellectual disability; PD = physical disability; VI = visual impairment; ASD = autism spectrum disorder; APE = adapted physical education; M = average; SD = standard deviation; n = number of subjects.

Three groups of students were formed to evaluate the effect of the intervention on students' attitudes. Demographic data of the students' groups are presented in Table 29.

Demographic factors		Control group	Group I 18 h	Group II 40 h
n		196	265	114
Gender	Boys	98	145	48
	Girls	98	120	66
Age <i>M</i> (<i>SD</i>)		13.71(1.19)	13.02(1.58)	12.94(1.01)
Had a stuc in PE class	lent with disabilities ses			
	Yes	46	137	29
	No	150	128	85

Table 29. Demographic data of the students' groups

Note. M = average; SD = standard deviation; n = number of subjects.

Repeated measures ANOVA test results for Group I (18-hour online APE course) showed that 18-hour online APE course had a positive and statistically significant effect on general physical educators' self-efficacy to include students with intellectual disabilities, physical disabilities visual impairment, and autism spectrum disorder into a general physical education class: ID scale F(1, 21) 21.81, p = .000, Partial Eta Squared (η^2) .51, Observed Power .994; PD scale F(1, 21) 27.01, p = .000, Partial η^2 .56, Observed Power .999; VI scale F (1, 21) 18.39 p = .000, Partial η^2 .47, Observed Power .983; ASD scale F(1, 21) 23.81 p = .000, Partial η^2 .53, Observed Power .996 (Figure 15).

Repeated measures ANOVA test results for Group II (40-hour contact APE course) showed that 40 hour contact APE course had a positive and statistically significant effect on general physical educators' self-efficacy to include students with intellectual disabilities, physical disabilities, visual impairment, and autism spectrum disorder into a general physical education class: ID scale F(1, 13) 8.48, p = .012, Partial η^2 .40, Observed Power .77; PD scale F(1, 13) 25.71, p = .000, Partial η^2 .66, Observed Power .997; VI scale F(1, 13) 24.01 p = .000, Partial η^2 .65, Observed Power .995; ASD scale F(1, 13) 53.31 p = .000, Partial η^2 .81, Observed Power 1.000 (Figure 15).

Repeated measures ANOVA test results for Control group revealed statistically insignificant differences between pre-intervention and post-intervention values of general physical educators' self-efficacy to include students with intellectual disabilities, physical disabilities and visual impairment into a general physical education class: ID scale F(1, 21) 2.09, p = .163, Partial η^2 .09,

Observed Power .281; PD scale F(1, 21) .07, p = .797, Partial $\eta^2 .003$, Observed Power .06; VI scale F(1, 21) .58 p = .454, Partial $\eta^2 .03$, Observed Power .113. The analysis of pre- and post-intervention data of ID, PD, and VI scales revealed that self-efficacy reduced after the intervention (Figure 15). Meanwhile, the repeated measures ANOVA test results of the control group revealed statistically significant differences of general physical educators' self-efficacy to include students with autism spectrum disorder into a general physical educator class before and after the intervention. After the intervention SE indicators increased: ASD scale F(1, 21) 8.91 p = .007, Partial $\eta^2 .30$, Observed Power .812 (Figure 15).



Note. ID = intellectual disability; PD = physical disability; VI = visual impairment; ASD = autism spectrum disorder; * = p < .05 – the result of change between pre-test and post-test is statistically significant.

Figure 15. Changes in ID, PD, VI, and ASD scales of PE teacher's self-efficacy before and after the intervention Comparing the results of PE teachers' self-efficacy between groups after the experiment, statistically significant differences were identified between Group I (18 h) and the Control group PE teachers' self-efficacy towards including students with intellectual disabilities (p = .043), physical disabilities (p = .000) and visual impairments (p = .000); between Group II (40 h) and Control group PE teachers' self-efficacy towards including students with intellectual disabilities (p = .045), physical disabilities (p = .000) and visual impairments (p = .001); between the Group I (18 h) and Group II (40 h) PE teachers' self-efficacy towards including students with intellectual disabilities (p = .045).

Repeated measures ANOVA test results of student Group I (students of PE teachers who participated in the 18-hour online APE course) showed that the 18-hour online APE course given to PE teachers had a positive and statistically significant effect on students' attitude towards the inclusion of peers with intellectual disabilities into a regular physical education class (ID scale) F (1, 264) 14.96, p = .000, Partial η^2 .05, Observed Power .971; a positive but statistically insignificant effect on students attitude towards the inclusion of peers with physical disabilities into a general physical education class (PD scale) F (1, 264) 2.33, p = .128, Partial η^2 .01, Observed Power .33 and students attitude towards the inclusion of peers with visual impairment into a regular physical education class (VI) scale F (1, 264) 2.00 p = .159, Partial η^2 .01, Observed Power .291 (Figure 16).

Repeated measures ANOVA test results of student Group II (students of PE teachers who participated in the 40-hour APE course) showed that the 40-hour contact APE course had a positive and statistically significant effect on students' attitudes towards the inclusion of peers with intellectual disabilities into a general physical education class (ID scale) F(1, 113) 13.73, p = .046, Partial η^2 .05, Observed Power .782, students' attitude towards the inclusion of peers with physical disabilities into a general physical education class (PD scale) F (1, 113) 14.75, p = .041, Partial η^2 .06, Observed Power .859, and students' attitude towards the inclusion of peers with visual impairment into a general physical education class (VI scale) F(1, 113) 12.63 p = .047, Partial η^2 .05, Observed Power .763 (Figure 16).

Repeated measures ANOVA test results of student Control group (students of Control group of PE teachers) showed a negative and statistically significant change of students' attitudes towards the inclusion of peers with intellectual disabilities, physical disabilities and visual impairment into general physical education classes during the intervention: (ID scale) F (1, 195) 29.74, p = .000, Partial η^2 .13, Observed Power 1.000, (PD scale) F (1, 195) 11.47, p = .001, Partial η^2 .06, Observed Power .921, (VI) scale F (1, 195) 9.90 p = .002, Partial η^2 .05, Observed Power .879 (Figure 16).

Comparing the results of students' attitudes towards inclusion of peers with intellectual disabilities, physical disabilities, visual impairments into PE class between the groups after the experiment, statistically significant differences between Group I (18 h) and Control group (p = .000) were found, between Group II (40 h) and Control group (p = .000), between Group I (18 h) and Group II (40 h) (p = .000).



Level of students' attitudes

Note. ID = intellectual disability; PD = physical disability; VI = visual impairment; * = p < .05 the result of change between pre-test and post-test is statistically significant.



Spearman's rank correlation coefficient r was calculated before and after the intervention to measure the statistical dependence between PE teachers' self-efficacy and students' attitudes towards the inclusion of students with disabilities in PE classes. SE data of 11 PE teachers from Control group, 15 teachers from Group I, and 6 teachers from Group II and respectively the data of their students' attitudes towards the inclusion of classmates with disabilities into the PE classes (General attitude subscale data), and attitudes towards the change of the game rules in order

to include students with relevant disabilities (Attitude towards Sport modification subscale data) were used to calculate the correlation. The obtained results revealed a linear dependence between PE teacher's self-efficacy level and students' attitude, i.e. the higher level of PE teacher's self-efficacy correlated with a more positive students' attitude both to the inclusion of classmates with disabilities into general PE classes and to the modification of rules of the game for the purpose of inclusion. The data analysis also revealed a stronger correlation between PE teacher's self-efficacy level and students' attitudes after the intervention. Correlation results are presented in detail in Table 30.

Gaala	Testing	Group I 18-hour course		Group II 40-hour course		Control group	
Scale	time	General attitude	Sport modification	General attitude	Sport modification	General attitude	Sport modification
ш	Pre	048	016	029	314	.000	.069
ID	Post	.020	.050	.086	.657	215	270
DD	Pre	138	157	.261	.429	.100	.228
PD	Post	.218	.251	.371	.493	.706*	.615*
VI	Pre	.050	.045	.086	.029	.535	.479
V I	Post	.061	.090	.486	.543	.672*	.616*

Table 30. Spearman's rank correlation between PE teachers' self-efficacy level and student's attitudes before and after the intervention

Note. * p < .05 = the result is statistically significant.

4. DISCUSSION

4.1. Analysis of instrument structure, validity and reliability of Self-Efficacy Scale for Physical Education Teacher Education Majors towards Children with Disabilities

The primary purpose of this study was to determine the structure and validity of the Lithuanian version of the SE-PETE-LT in a sample of Lithuanian PE teachers. The second purpose of this study was to indicate the associations between the type of disability of students and the experience in APE and SE level of PE teachers.

After completing the EFA for each scale (ID, PD and VI) of the SE-PETE-D-LT instrument, we found that all items in all scales presented only one factor. The EFA in the different sample groups, which were formed according to different demographical factors, showed that PE teachers who attended an APE course or seminar influenced the structure of the scales. Although the sample size was not large, we followed de Winter, Dodou and Wieringa's (2009) recommendations, suggesting that factor recovery can be reliable with sample sizes well below 50. The results of the group of PE teachers who attended an APE course or seminar showed some differences and similarities to the original SE-PETE-D scale (Block et al., 2013). In the Lithuanian case, the ID scale consisted of two factors (in factor F1 the questions related to staying on task in fitness test and when teaching sports skills, modifying the test, equipment and actual skills; in the factor F2 the questions were related to peers' instruction, modifying the rules and staying on task during the game); the PD scale consisted of three factors (in factor F1 the questions were related to modifying the goals and the task, and instructing peers during fitness testing; in factor F2 the questions related to safety and modifying equipment; and, in factor F3 the questions related to instruction of peers when teaching sports skills and during the game); the VI scale consisted of two factors (in factor F1 the questions related to teaching the basic skills of the sport and playing the actual game; in factor F2 the questions related to physical fitness testing). Comparing the scale structures of Block et al. (2013) with the scale structures in our study, we found questions relating to the instruction of peers to help students with ID in the ID scale in our case. Also in the study provided by Block et al. (2013), it was essential for establishing one of the factors. The PD scale structure also had more similarities than differences with that of Block et al. (2013). In the Lithuanian version of PD scale, the main areas of the structures are specific adaptation, safety
and peer instruction. In our study, one of the factors in the VI scale structure consisted mostly of the physical fitness testing area; another factor involved teaching of sport techniques and including students with VI into an actual game, while in the case of Block et al. (2013), the study distinguished such factors as specific adaptation and peer instruction. In addition, we performed a separate factor analysis with the sample size of 138 participants. We randomly split the sample of 138 teachers (who had not participated in an APE course) into two independent samples, and we again performed an EFA with one of them and a CFA with the other half. The results show one factor structure in each scale, and that the one-factor model in the each scale was fit. An EFA and CFA value shows that results of this small sample were significant. However, if the aim is to strengthen results of the separate analysis, the replication analysis should be done with a larger sample.

According to Block et al.'s (2013) study, results show that more than 80% of the participants had experienced an APE course, seminar or practicum session, but in the case of our study, we had the opposite situation (80% of the participants did not have experience with APE). Given these circumstances, we suggest that those PE teachers with less knowledge and experience are less differentiated in their SE regarding inclusion and adaptation. PE teachers with more training and experience appear to have a more differentiated perspective, one based on the knowledge bases they have acquired. PE teachers who had taken an APE course or seminar had a multidimensional structure in the questionnaire (of 2 or 3 factors, even though the items were not equally distributed as in the original (Block et al., 2013), and the other PE teachers (no APE course or seminar) had a unidimensional structure. This may explain the discrepancy between our results of EFA and original version results of EFA. According to scientists, cultural factors (Klassen, 2004) and performance experiences (Bandura, 1997) might influence both selfefficacy and responses to questionnaires.

We compared our survey results with those of surveys conducted by researchers in other countries (Table 31). It is noticeable that Taliaferro et al. (2015) also indicated only one factor in each ID, PD and VI scale in their preliminary testing of survey participants prior to practicum intervention, while in Time 2 and Time 3 of EFA (which were performed after an APE training) the outcomes varied, suggesting a multiple-factor solution in each of these scales. Taliaferro et al. (2015) proposed that the results of their factor analysis be interpreted in accordance with Osborne and Fitzpatrick (2012), suggesting that

when the same model is applied to a new sample, the model is rarely as good a fit, and when the sample size is not met, the factor structure may not be stable or generalizable. Another validation example of SE-PETE-D was conducted in the Czech Republic by Baloun et al. (2016) and Kudláček et al. (2018), where no EFA but only a CFA was performed in order to confirm the factors revealed by EFA in the US (Block et al., 2013). The CFA results by Baloun et al. (2016) and Kudláček et al. (2018) showed that the designed models of scales ID, PD and VI were a good fit (Table 31). However, the degree of inclusion within the Czech school system may have been different than that in the Lithuanian school system.

The Cronbach's reliability coefficients of every scale are described in Table 31, in comparison to Cronbach's reliability coefficients, which were obtained during studies made in other countries with SE-PETE-D scales. As presented in Table 31, our results of the internal consistency analysis reached very strong reliability values (α for ID scale .96, α for PD scale .97, α for VI scale .98), which were within the range of the other studies, except for that of Baloun et al. (2016), who presented slightly lower values. It should be noted that Baloun et al. (2016) and Kudláček et al. (2018) used a different set of scale questions than that used in our study – that is, they used only those questions that Block et al. (2013) indicated following EFA (6 questions in the ID scale, 10 questions in the PD, and 9 questions in the VI scale). In our study, as well as in the Block et al. (2013), Taliaferro et al. (2015), Tekidou et al. (2015), and Reina et al. (2016), studies, Cronbach's α was indicated using the preliminary amount of scale questions provided in the survey – that is, 11 questions in the ID scale, 12 questions in the PD scale and 10 questions in the VI scale.

The results of the test-retest analysis indicated that the SE-PETE-D-LT instrument is sufficiently reliable. According to Vallerand (1989), a coefficient of .60 or more is sufficient for test-retest analysis. In our study, the pooled Pearson's correlation coefficient of the scales' scores was greater than .60. The reliability measured in each scale separately showed that only the ID scale factor was slightly below .60. Czech researchers (Baluon et al., 2016) reported a study with 17 Master students, and the test-retest results after 14 days showed test-retest Spearman's reliability coefficients in the ID scale (r = .78), PD scale (r = .53) and VI scale (r = .69). Given the similarly reliable results in the Lithuanian and Czech samples across different time spans (14 days through 14 weeks), it appears that the SE-PETE-D is reliable across repetitions.

The second s	Dauticinante	Reliability	Construct	validity	I
(nation) kelerences	rarucipants	Cronbach's alfa	EFA	CFA	1
	PE teacher education majors	ID scale (11 items) .86	Two-factor: peers' instruction (3 items), staying on task (3 items)	CFI = 1.00, NFI = .99, and RMSEA < .001	r -
(US) Block et al. (2013). Creation and validation of SF instrument	n = 486 (170 females; 316 males); ages ranged from 19 to 46.	PD scale (12 items) .90	Three-factor: specific adaptations (4 items), Peers' instruction (3 items), safety (3 items)	CFI = .96, NFI = .95, and RMSEA = .086	
for physical education teacher education majors toward inclusion	The data were randomly divided into two ($n = 243$ cases in each half). EFA were conducted on the first half of the data and CFA – on the second half.	VI scale (10 items) .92	Two-factor: specific adaptation (5 items), peers' instruction (4 items)	CFI = .98, NFI = .98, and RMSEA = .082	ł
(US) Taliaferro et al. (2015). Preservice physical educators' self- efficacy beliefs toward inclusion: The impact of coursework and practicum	Preservice PE students n = 98 (75 male, 23 female), age from 18 to 36 years ($M = 21.13$, SD = 2.11)	ID scale (11 items) .96 PD scale (12 items) .96 VI scale (10 items) .96	Time 2 and 3 The results revealed Time 1 variability in factor One-factor structure within scales (SE significantly increased)		I
(Greece) Tekidou et al. (2015).		ID scale (11 items) .90	r		
Education Teachers toward	PE teachers $n = 60$	PD scale (12 items) .94	-	1	
LICTUSION III FILYSICAI EXULTATION Classes		VI scale (10 items) .97	2		I
(Spain) Reina et al. (2016). Self- efficacy of physical education	PE teachers n = 102 (60 males, 42 femaled) average are of	ID scale (11 items) .98			
students with disabilities and	40.47 SD = 9.02 years;	PD scale (12 items) .94	- Marana - M		
and experiences	M = 14.87 SD = 9.02	VI scale (10 items) .94			ŀ

Table 31. Comparison of reliability and construct validity results of studies

(Nation) References	Participants	Reliability		Construct	t validity
the sum of the second se	-	Cronbach's alfa	EFA		CFA
	PE students from five	ID scale (6 items) .76			CFA was performed for evaluation of content validity following the factor model from the original study (Block et al.
(2016). (2016). Czech SE scale for physical	Czech university n = 252 (151 males, 101 females): age ranged from				2013). The two-factor model: CFI = 1.00, NFI = 98, and RMSFA < 001
education majors towards children with disabilities	19 to 49 years $(M = 24.28)$ SD = 4.26	PD scale (10 items) .87			The three-factor model: CFI = .96, NFI = .94, and RMSEA = .08
		VI scale (9 items) .90			The two-factor model: CFI = .97, NFI = .96, and RMSEA = .08
5					CFA was performed for evaluation of content validity following the factor model from
(Czech Republic) Kudláček et al. (2018) The development and	PE students of master's level from five Czech				the original study (Block et al. 2013).
validation of revised inclusive physical education self-efficacy	university n = 200 (102 males, 98	ID scale (6 items) .82			The two-factor model: CFI = .97, NFI = .98, and RMSEA = .10
questionnaire for Uzech physical education majors	temates); average age of $24.49 SD = 1.55$ years	PD scale (10 items) .90			The three-factor model: CFI = .96, NFI = .94, and RMSEA = .10
		VI scale (9 items) .92			The two-factor model: CFI = .97, NFI = .97, and RMSEA= .09
е В П		÷	EFA of total	EFA of	Sample size = 69 (PE teachers
	PE teachers $n = 171$ (51 males and 120	ID scale (11 items) .96	sample size $(n = 171)$ and	separate group	who had not APE) The one-factor models:
	females), ages between 22		separate groups	Multifactorial	NFI = .976, CFI = 1.000,
(Lithuania) This study	to 65 years old $AA = A6 A7 \cdot SD=0.08$		(PE teachers who did not have	structure was	and $RMSEA = .000$ NFI = 957 CFI = 997
	teaching experience	PD scale (12 items) .97	APE; $n = 138$,	the teachers	and $RMSEA = .054$
	M = 21.52 SD = 9.23	VI scale (10 items) .98	n = 69) One-factor	who had APE $(n = 33)$	NFI =.981, CFI = 1.000, and RMSEA = .000

In regard to our second purpose, we found differences in PE teachers' SE across disability scenarios. The PE teachers who participated in the survey presented moderate SE towards including students with ID (M = 3.31; SD = .79) and students with PD (M = 3.11; SD = .87), and a significantly lower SE (p < .05) towards including students with VI (M = 2.84; SD = 1.01) in a mainstream PE class. Our findings are similar to those indicated in previous research that was not, however, supported with ANOVA. For example, the mean SE results of Jovanović et al. (2014) as well as of Hutzler and Shama (2017) indicated that PE students' SE was higher, referring to including students with ID or PD compared to including students with VI. Baloun et al. (2016), Reina et al. (2016) and Taliaferro et al. (2015) found that self-efficacy level is influenced by the type of disability: physical education teachers' sense of self-efficacy is higher when in the PE lessons they include children with visual impairments.

This study data also shows that the PE teachers who had attended previous APE training presented higher SE than those who did not attend such training. This finding is supported by other researchers' data with similar results (Hutzler et al., 2005; Taliaferro, 2010; Wang, Qi, & Wang, 2015). Presumably, such teachers may be influenced by the increased professional knowledge acquired during their training, which leads to greater competence in overcoming barriers when including students both with and without disabilities in their classes.

4.2. Analysis of structure, validity and reliability of physical education teachers' self-efficacy towards including students with disabilities – autism instrument

The first purpose of this study was to approve the Lithuanian version of the PESEISD-A validity and reliability.

The results of an exploratory factor analysis on the 10-question SE scale of the Lithuanian versions revealed a one-factor solution explaining 82.99 percent of the variance, while Taliaferro (2010) exploratory factor analysis revealed a one-factor solution explaining 57.05 percent of the variance, and Confirmatory Factor Analysis performed by Li et al. (2018) revealed the one-factor model of the PESEISD-A fit the total sample (n = 432) adequately. The coefficients of internal

consistency and test-retest reliability of PE teachers' self-efficacy towards including students with ASD into general PE classes scale, *Mastery experiences* scale, *Vicarious experiences* scale, *Social Persuasion* scale, *Physiological State* scale, and *Behaviours* scale confirmed the appropriateness of the Lithuanian versions of PESEISD-A-LT for data analysis. However, when we analysed the test-retest reliability of perceived challenges scale, we found correlation coefficient lower than .60. This result shows that the scale of *Perceived challenges* is more sensitive to time period than other scales. Perhaps it is related to a long time period between tests (14 weeks). When we compare our research results with those of Taliaferro's (2010) (n = 236), it can be observed that validity and reliability coefficient values of SE scale and all scales are similar or higher except for the coefficient of perceived challenges scale test-retest scores, where the value was less than .60. A recently conducted study by Li et al. (2018) involving Chinese preservice physical educators (n = 432) showed high coefficients of internal consistency ($\alpha = .92$) and test-retest reliability (r = .90) of SE scale.

The second purpose of this study was to assess the relationship between selfefficacy scale and other scales. The correlation analysis between PESEISD-A-LT scales showed that PE teachers' SE beliefs experienced the strongest influence of mastery experience. According to Bandura (1995), the most influential source of efficacy information is personal mastery experiences because they provide the most authentic evidence of whether one can master whatever it takes to succeed in a particular field or endeavour. Tschannen-Moran and McMaster (2009) propose that SE beliefs may be diminished when success is achieved through extensive external assistance, after considerable effort, or on a task perceived as easy or unimportant. It serves to convince them that they have what it takes to achieve increasingly difficult accomplishments of a similar kind. Self-mastery is best achieved through progressive mastery, which is attained by breaking down difficult tasks into small steps that are relatively easy, in order to ensure a high level of initial success. Individuals should then be given progressively more difficult tasks in which constructive feedback is provided and accomplishments are celebrated before increasingly challenging tasks are attempted (Heslin & Klehe, 2006). Also we found that the source of efficacy information as vicarious experience, social persuasion, and physiological states are significant predictors on PE teachers' SE beliefs. The influence of the observed models to the person's sense of self-efficacy depends on how much the observed model is similar to those who observe them

(Bandura, 1986). Through their behaviour and expressed ways of thinking, competent models transmit knowledge and teach observers effective skills and strategies for managing environmental demands (Klassen & Tze, 2014). (Bandura, 1997; Tschannen-Moran, & Mcmaster, 2009). Teachers who have doubts about their activities and receive verbal encouragement from somebody to continue these activities will likely put more efforts to perform as well as possible than those who did not receive verbal encouragement (Bandura, 1997; Tschannen-Moran, & Mcmaster, 2009). To the extent that persuasive boosts in perceived SE lead people to try hard enough to succeed, self-affirming beliefs promote development of skills and a sense of personal efficacy. People also rely on their physiological and emotional states in judging their capabilities. Teachers' experienced stress and tension determine poor activity results (Bandura, 1995). It is not the sheer intensity of emotional and physical reactions that is important but rather how they are perceived and interpreted (Bandura, 1995). For example, teachers who have a high sense of self-efficacy are likely to view their state of affective arousal as an energizing facilitator of performance, whereas for those who have low self-efficacy sense, their arousal is the factor which leads to weak activities (Vancouver et al., 2001). Therefore it is needed to pay a lot of attention to teachers' emotional state improvement: preparing teachers and developing their competence after studies to apply various methods in order to control themselves in stressful situations (Maddux, 2009).

Results of analysis showed that SE beliefs had influence on their behaviour to work with students with ASD who are included in their classes. Physical educators who had higher levels of self-efficacy towards including students with ASD tended to engage in behaviours associated with inclusion more frequently. In addition, we found that mastery experience, vicarious experience, social persuasion are strong predictors on behaviour. PE teachers who had these experiences performed more often the tasks (modified equipment, activities, instructions, rules, created a safe environment, promoted social interactions, assessed motor skills, collaborated effectively with others, motivated the student) for students with ASD who are included in general physical education classes. Armitage and Conner's (2001) meta-analysis showed that self-efficacy accounted for the most additional variance in intention, and both perceived behavioural control and self-efficacy accounted for equivalent proportions of variance in behaviour. The implication is that individuals form intentions that they are confident with and they can enact (those they perceive self-efficacy better), and that translation of intention into action may be facilitated both by self-efficacy and assessment of more external factors tapped by perceived behavioural control (Armitage & Conner, 2001). Taliaferro (2010) found that PE teachers' SE beliefs towards including a student with ASD were a strong predictor on self-reported inclusion behaviour.

Also SE had a significant inverse relationship with perceived challenges. Physical educators who had higher levels of self-efficacy perceived fewer challenges associated with including students with ASD in their classes. Bandura (1997) proposed that SE beliefs are associated with the degree of challenge that exists in the context of a task. As it pertains to teaching students with SEN, physical educators with low self-efficacy may view students with SEN as a threat instead of a challenge for their professional performance (Hutzler et al., 2005). Teachers who have a higher self-efficacy sense are likely to seek to undertake more complicated tasks, but not avoid them; they will put more efforts to achieve better results compared to teachers who have a low self-efficacy sense.

4.3. Analysis of structure, validity and reliability of the children's attitudes towards integrated physical education-revised instrument

The purpose of this study was to determine the structure and validity of the Lithuanian version of the CAIPE-LT in a sample of Lithuanian general education students without disabilities.

After providing EFA for each scale of CAIPE-LT (ID, PD, and VI), twofactor structure was found in all scales. The results of the analysis showed that the distribution of statements which comprise ID and PD scales factors was the same. The distribution of the values of the VI scale factor differed slightly from the structure of the ID and PD scale factors. When comparing the CAIPE-LT instrument scales structure with the CAIPE-R version structure, the distribution of CAIPE-LT ID, PD, and VI scaling factors between the factors slightly differed from the CAIPE-R structure. The statement "Due to [Pseudonym] I would play slower because he cannot play so fast", which belong to the subscale *General attitude*, was assigned to the *Sport modification* subscale on all scales of the Lithuanian version (ID, PD, VI) by turning the axis of factors using the Varimax rotation method. The statements "When playing football I would be happy to pass the ball to [Pseudonym]" (ID scale) and "Playing basketball I would be happy to pass the ball to [Pseudonym]" (PD scale) belonging to the Sport modification subscale, was assigned to the General attitude subscale by turning the axis of factors using the Varimax rotation method. The statement "I would hold [Pseudonym]'s hand and would say prompts/warnings constantly" (VI scale) belonging to the Sport modification subscale, was assigned to the General attitude subscale by turning the axis of factors using the Varimax rotation method. Factors contributing to the CAIPE-LT Lithuanian version explained more than 50% of the overall dispersion. This score is very high comparing it with the results of the studies conducted by Campos et al. (2013), Cordente-Mesas et al. (2016), and Hutzler and Levi (2008) (Table 32). The factors which were noted by Kudláček et al. (2011) also explained more than 50% of dispersion (Table 32). The factors identified in the Lithuanian CAIPE version define the same subscales as the CAIPE-R version: Factor 1 is described as a General attitude subscale (students' attitude towards including students with disabilities into physical education class), and Factor 2 is described as a Sport modification subscale (students' attitude towards changes of the rules of the game to include students with disabilities). An analysis of other researchers' work showed that the general physical education attitude subscale in the studies of Czech researchers Kudláček et al. (2011) was called as General beliefs about inclusion in physical education subscale and the sport specific subscale Belief about actual behaviour (Table 32). Comparative analysis of the research also revealed that three factors were identified in the studies carried out by the Portuguese and Spanish researchers, two factors were described in the same way as in CAIPE-R (Block, 1995), the third factor was identified by Spanish researchers as External Assistance (Cordente-Mesas et al., 2016). It should be noted that the CAIPE questionnaire taken from the Spanish research evaluated the students' attitudes towards classmates who had visual impairments. The items 9 and 11 refer to the concept of counting on external help to provide support to the peer with disability. Cordente-Mesas et al. (2016) believe that Spanish students tend to be positive towards this idea, having obtained higher values that in the sentences contained in the original Sport Specific subscale, and that, for the Spanish students, the idea of helping the peers with disabilities is significantly more interesting that the idea of modifications of sport rules, which could explain the presence of this third factor.

In order to confirm CAIPE-LT versions' ID, PD, and VI scale factor

structures revealed by EFA, CFA was performed for each of these scales. To improve the model-data fit, the Amos software automatically created a 'modification index', which suggested several errors (residuals, designated as an e + number) to be correlated. The chi-square was significant (model fit) in all models. When the sample is less than 200, the acceptable model fit is at a time p > .05, and when the sample is more than 200 acceptable model fit is when p < .05 (Awang, 2015). The other goodness of fit measures also demonstrated an acceptable model fit. In the three evaluated models, the NFI and CFI exceeded the .90 cut-off criteria. In the ID, PD, and VI scales the RMSEA demonstrated good fit to the model. In the case of Portugal (Campos et al., 2013), the CFA was performed on the basis of the CAIPE-R (Block, 1995) structural model and indicated that the overall model was moderately supported by the two-factor structure for the four out of six criteria reaching the cut-off intervals acceptable to confirm the model fit.

The CAIPE-LT results of the internal consistency analysis reached good reliability values (α for ID scale .83, α for PD scale .87, α for VI scale .89). Subscale results of the internal consistency analysis also reached acceptable and good reliability values (Table 32). Compared to other authors' data, CAIPE-LT internal consistency values were very high (Table 32). The results of the test-retest analysis indicated that the CAIPE-LT instrument is sufficiently reliable. According to Vallerand (1989), a coefficient of .60 or more is sufficient for test-retest analysis. In our study, the pooled Spearman-Brown correlation coefficient of the subscale scores was greater than .60. CAIPE-R (Block, 1995) test-retest coefficient of general PE attitude subscale was also marked by good stability, and the sport specific subscale, on the contrary, did not show good stability (Table 32).

A comparative study was conducted between the data of this study, data from US (Block, 1995), and research data obtained by other European scientists (Campos et al., 2013; Cordente-Mesas et al., 2016; Hutzler & Levi, 2008; Kudláček et al., 2011) and it showed that CAIPE-LT is a valid and reliable instrument (Table 32).

(Nation) Deconsident	Participants	Peculiarities of	Reliab	ility	Constr	uct validity
Nesearchers		questionnaire			EFA	CFA
(US) Block	208 (males 121; females 87),	Student with physical disability, who uses	General PE subscale (6 statements)	$\alpha = .87$; test-retest r = .78	Separate factor analysis for each	
(1995) CAIPE-R	5 and 6 grade students from two schools	a wheelchair, participating in a softball	Sport-specific subscale (5 statements)	$\alpha = .66;$ test-retest r = .56	subscale; one factor structure in each subscale	
(Israel) Hutzler, and	120 (males 62; females 58),	Student with physical disability, who uses	General attitude subscale (7 statements)	α = .77	EFA was applied and a two-factor solution was computed	
Levi (2008) CAIPE-IL	sucents from graces 9, 11, and 12 grade	a wneelcnaur, participating in a basketball	Sport-specific subscale (4 statements)	α = .62	accounting for 42% and 48% of the variance, respectively	
(Czech Republic) Kudláček,	286 students: males 146 (mean age 13.26 years,	Student with physical disability, who uses	General beliefs about inclusion in PE (6 statements)		Two components and	
Ješina, and Wittmanová (2011) CAIPE-CZ	<i>SD</i> = 1.48), 140 females (mean age 13.12 years, <i>SD</i> = 1.61)	a wheelchair, participating in a basketball	Beliefs about actual behaviour (4 statements)	α = .84	explained 53.05% of the variance	
	683 students (males 367; females 316) from 11 to 16 vears (7 th to 9 th grade)		General PE subscale (4 statements)	α = .72		CFA was conducted to
(Portugal) Campos, Ferreira, and	(mean age 13.31 $SD = 1.10$); EFA participants were 174 students, 93 males and 81 females (mean age 13 36:	Student with physical disability, who uses a wheelchair,	Sport-specific subscale (3 statements)	α = 48	Three components and in combination	assess the goodness-of- fit of the original CAIPE-R factorial model: $x^2/df = 3,45$
Block (2013) CAIPE-R	SD = 1.09) CFA participants were 509 students, 274 males and 235 females (mean age 13.32, SD = 1.11)	participating in a basketball	F3 (2 statements)	1	explained 41.27% of the variance	(<i>p</i> < .001), CFI = .81, GFI = .95, AGFI = .92, SRMR = .03, and RMSEA = .067

Table 32. Comparison of reliability and construct validity results of studies

astruct validity CFA					CFA was conducted to assess the goodness-of- fit of the CAIPE-LT factorial model: $x^2(38)$ 108.66 tion ($p = .000$); NFI = .963; 8% CFI = .975; RMSEA = .043				$x^{-}(3 l) 114.79 (p = .000);$ NFI = 971 CFI = 980:	RMSEA = .046	$\begin{array}{c} x^2(33) \ 96.27 \ (p=.000);\\ \text{NFI} = .980 \ \text{CFI} = .986;\\ \text{RMSEA} = .044 \end{array}$			
Cons	EFA	Three components	and in combination explained 35.98% of	the variance			Two components and in combination	explained 52.08% of the variance	Two components	and in combination	explained 54.56% of the variance	Two components	and in combination	explained 58.86% of the variance
bility		$\alpha = .81$ $\alpha = .47$ $\alpha = .62$ $\alpha = .37$			$\alpha = .82$; test-retest r = .78		$\alpha = .70$; test-retest r = .77		$\alpha = .86; \text{ test-retest}$ $r = .79$ $\alpha = .71; \text{ test-retest}$ $r = .77$		$\alpha = .87$; test-retest	CO 1	$\alpha = .80;$ test-retest r = .82	
Relia		General PE subscale (5 statements) External Assistance (2 statements) Sport-specific subscale (3 statements)			General attitude subscale	(6 statements)	Sport modification subscale	(5 statements)	General attitude subscale	(6 statements)	Sport modification subscale (5 statements)	General attitude subscale	(6 statements)	Sport modification subscale (5 statements)
Peculiarities of questionnaire		G Student with visual (5 mpairment, (2) articipating in Sr kickball su				Student with intellectual disability,	participating in a football		Student with physical disability, who uses a wheelchair, participating in a basketball ()			Student with visual impairment, participating in "Quadrate"		
Participants		791 participants comprised 793 males and 398 females between the ages of 9 to 13 years old ($M = 10.80$; SD = .739), representing 15 schools from five provinces			1008 participants comprised of 521 males and 487 females between the ages of 10 to 15 years old (M = 12.90; SD = 1.21) (56th to 8th grade), representing 8 general education schools from five municipalities; Test-retest participants were 196 students (males 98; females 98), mean age 13.71 years, $SD = 1.19$, (5th to 9th grade), representing 6 general education schools from one municipalities						from one municipalities			
(Nation) Researchers		(Spain) 7 Cordente- 6 Mesas et al. 9 (2016) S CAIPE-SP Sc				Lithuania) e e e e fr fris study raite (.3. (.3. (.3. 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.								

4.4. The situation study of physical education teachers self-efficacy towards including students with intellectual, physical and visual disabilities in the general physical education classes

The purpose of this study was to determine the impact of physical education teachers' self-efficacy beliefs towards including students with special educational needs (intellectual disability, physical disability, and visual impairments) in the general education classes, demographic characteristics and other personal attributes influence on the teachers' self-efficacy levels.

Analysis of physical education teachers' personal attributes showed that one fifth of physical education teachers had adapted physical education (APE) courses or seminars in their studies or after graduation, and about half of the respondents answered that they had completed special education course or workshops during or after studies. The analysis of US researchers Beamer and Yun (2014) who examined 142 PE teachers (mean age 46; SD = 9.20) showed a reverse situation in Lithuania: in undergraduate studies more than 70% of teachers had an APE course, and a special education course (during undergraduate and graduate studies) was offered to less than 30% of PE teachers. Also, this study found that less than one third of PE teachers had APE course during graduate studies, and 68% in in-service training (Beamer & Yun, 2014). Spanish researchers Seirra et al.'s (2016) study results of 79 PE teachers (mean age 40.4; SD = 9.20) show that 18.1% of teachers had APE courses. Analysing the results of the support received, it was found that more than half of the interviewed physical education teachers had the opportunity to get or got the support from a psychologist, but the support of such professionals as the APE, teacher's assistant, special educator, or physiotherapist was available to only onesixth of physical education teachers. A study by US researchers Beamer and Yun (2014) found that 72% of PE teachers received support from a teacher assistant, 80% from a special education teacher and 49% from a physical therapist. By analysing the teachers' experiences when including students with disabilities in the general physical education classes, one third of teachers had the experience of including students with ID, PD, and VI into a physical education class. Based on this situation, the analysis of data from self-efficacy scores revealed that self-efficacy of the physical education teachers who participated in the study in Lithuania was moderate; the highest level of confidence was determined by including students with intellectual disability, and the least – including students with visual impairments.

Comparing the level of self-efficacy of Lithuanian physical education teachers with the self-efficacy estimated and presented in other countries, it was found that teachers of physical education in Spain showed a similar level of selfefficacy as the Lithuanian physical education teachers (Reina et al., 2016; Sierra et al., 2016), higher self-efficacy levels were demonstrated by current and future physical education teachers from the United States (Block et al., 2013; Taliaferro et al., 2015), Serbia (Jovanović et al., 2014), and Czech Republic (Baloun et al., 2016). It was also found that the level of self-efficacy of physical education teachers in Lithuania as well as in other countries depends on the type of student disability. For example, the mean SE results of Jovanović et al. (2014) as well as those of Hutzler and Shama (2017) indicated that Sport and PE students' SE was higher in regard to including students with ID or PD compared to including students with VI. The SE study results of Baloun et al. (2016), who surveyed the last year Bachelor students, also revealed the tendency of SE to be higher in including students with PD compared to students with ID and VI. The results of Taliaferro et al.'s (2015) Course 1 and Course 2 time 1 (before the practicum intervention) also indicated that SE was higher while considering the inclusion of students with PD than students with ID and VI. On the other hand, Reina et al.'s (2016) SE results showed a tendency for SE to be higher when including students with ID than when including those with VI and PD. Therefore, it can be concluded that the type of disability influences the teachers' level of SE, and that the inclusion of students with VI into PE classes appears to be a greater challenge for PE teachers than the inclusion of students with ID or PD. Analysing the data, it was observed that in response to the questions in demographic section "Did you have the APE course /seminars during the studies or after graduating?", there were statistically significant differences between those teachers who had the course of the applied physical activity and the teachers who did not complete the course /seminars. A significant difference was found between self-efficacy level of teachers' who had experience in including students with physical disabilities and visual impairments in the general lessons and those who did not have this experience. The studies conducted by Beamer and Yun (2014) and Reina et al. (2016) also show that PE teachers who indicated that they had the experience of including students with disabilities into the PE classes had a higher level of selfefficacy than teachers who did not have this experience. By analysing teachers' self-efficacy levels among those who had personal experience with people with

intellectual disabilities, physical disabilities and visual impairment and those who did not, the results showed that experience with friends with disability had a significant impact on teachers' self-efficacy towards including students with disabilities in the activities of general lessons. This result confirms that friends play a significant role in the process of personal socialization (Berns, 2009), that is, teachers who had persons with disabilities among their friends, not only had more positive attitudes towards the process of inclusion, but also had a higher selfefficacy level, when it was necessary to include students with disabilities in the general physical education class. By analysing the differences between selfefficacy level of teachers who have received support from physical activity, teachers' assistants, physiotherapists, specialist teachers, psychologists and those who did not get the support from these specialists, it was observed that a higher level of self-efficacy was found among those who had the support from such specialists. A correlation relationship was calculated to determine the strength of the relationship between the level of self-efficacy and the support received from the specialists for including student with disability in the physical education class activity. Calculated correlation coefficients of Spearmen's ranking between the level of self-efficacy and the support received from APE specialist, the teacher's assistant, and physiotherapist were weak but significant. Based on the results of the correlation, it can be assumed that the support received from the APE specialist, the teacher's assistant and the physiotherapist had a greater positive effect on the self-efficacy of the physical education teacher towards including students with disability in the general physical education class activities than the support got from a special education teacher or psychologist. Meanwhile, Beamer, and Yun (2014) found that special education teacher support also had a positive influence on teacher self-efficacy (r = .23; p < .01).

Correlation analysis revealed that: APE course /seminars had a positive influence on the physical education teachers' self-efficacy towards including students with physical disability and visual impairments; the previous experience of including students with disabilities had a positive influence on teachers' selfefficacy towards including students with visual impairments; the previous personal experience with a person with disability had a positive influence on teachers' selfefficacy towards including students with ID, PD, and VI; the possibility to get or getting the support from an APE specialist had a positive influence on teachers' self-efficacy towards including students with PD, and VI; the possibility to get or getting the support from a teachers' assistant had a positive influence on teachers' self-efficacy towards including students with ID, and VI; the possibility to get or getting the support from a physiotherapist had a positive influence on teachers' selfefficacy towards including students with ID, PD, and VI. These results show that in order to increase the level of self-efficacy of physical education teachers, the type of disability should be taken into account, as the teacher including students with different disabilities faces different challenges. For example, according to the results of this study, the level of self-efficacy of teachers towards including students with ID was higher when they had personal experience with persons with a disability, when they had the opportunity to receive support from a teacher's assistant and a physiotherapist; the level of self-efficacy of teachers towards including students with PD was higher when they had personal experience with persons with a disability, had the APE course /seminars, had the opportunity to receive support from an APE specialist and a physiotherapist; the level of self-efficacy of teachers towards including students with VI was higher when they had personal and working experience with persons with a VI, when they had APE course, had the opportunity to receive support from an APE specialist, a teachers' assistant and a physiotherapist.

The regression analysis clarified the results of the correlation analysis and found that the sense of teachers' self-efficacy to include students with ID and PD depended on received APE course or workshops during or after their studies, the support received from a physiotherapist, personal experience with persons with ID and PD; the level of self-efficacy of teachers towards including students with VI depended on the APE course, support from a physiotherapist and the experience of including students with VI in general PE class.

The analysis of research results showed that such factors as the support of professionals (APE specialist, teacher assistants), adapted physical education knowledge, and teacher training in inclusive practices had a positive influence on the PE teachers' self-efficacy sense towards creating an inclusive learning environment for students with SEN (Hutzler, 2003; Jerlinder et al., 2010; Karani & Skordilis, 2016; Kwon & Block, 2017; Mauerberg-deCastro et al., 2013; Reina et al., 2016; Taliaferro, 2010; Tindall et al., 2016).

Having in mind that direct experience with people with disabilities, the APE knowledge and support received positively influence the feeling of self-efficacy of PE teachers, it is necessary to develop and apply strategies for the development teachers' self-efficacy beliefs towards inclusion of students with SEN.

4.5. The situation study about physical education teachers' self-efficacy towards including students with autism spectrum disorders in the general physical education classes

The first purpose in this study was to provide an assessment of current physical education teachers' self-efficacy toward including students with ASD. The data analysis revealed that moderate (5-6 out of a possible 10) level of SE toward the inclusion of students with ASD into general PE classes prevailed among the Lithuanian PE teachers who participated in the survey. This result reveals that PE teachers do not feel well prepared to include students with ASD in their classes. The results of this study show a significant difference in SE-level between Lithuanian and US teachers. The research carried out by Taliaferro et al. (2015) showed that the level of students in physical education teacher education programs is much higher than the average (8-9 out of a possible 10). This shows that although Lithuania has been legally moving from integration towards inclusive education, in practice, the development of inclusion is facing obstacles such as a lack of competent teachers. Ensuring the training of teachers for working with children with different educational needs and ensuring continuous improvement of qualifications and competences is one of the main challenges the education system is still facing not only in Lithuania but also in other countries (European Agency for Development in Special Needs Education, 2012; Galkienė, 2016; Griggs & Medcalf, 2015).

The secondary purpose of this study was to identify which predictors made the influence on the PE teachers' SE level toward inclusion students with ASD. For this purpose, analyses have been carried out which allowed to determine relationships between the level of SE, personal attributes, the sources of SE, behaviour, and perceived challenges.

Personal attributes and self-efficacy. The Lithuanian PE teachers' SE level study revealed that the PE teachers' SE level was positively influenced by the APE course or seminar, students with ASD included in PE classes, support from APE specialists, physiotherapists, psychologists, and personal experience with individuals with ASD (friends or family members with ASD). The Lithuanian PE teachers' SE level study found that direct contact with students with ASD in inclusive settings had a significant impact on PE teachers' self-efficacy development: having students with ASD in PE classes and having friends with

ASD. The results obtained by Beamer and Yun (2014) and Taliaferro (2010) also indicate that this kind of teachers' experiences predicted their SE for including students with ASD. According to Bandura (1986), mastery experience is one of the strongest sources, which make the significant influence on personal self-efficacy. However, the impact of available mastery experiences on SE level is dependent on how PE teachers succeeded in including students with ASD in the class (Bandura, 1997; Block et al., 2010; Klassen & Tze, 2014; Tschannen-Moran & McMaster, 2009). This depended on whether the student with ASD was only integrated into PE class, but the PE teacher did not include him/her in physical activity or if the PE teacher tried to include the student with ASD, but he failed to do this successfully, and if the PE teacher included the student with ASD and it seemed to be a good thing for him/her, and the level of the SE might decrease or even increase significantly.

In such cases, appropriate knowledge or support from other professionals is required (Campos et al., 2015). The analysis of the results found that the PE teachers' SE level was positively influenced by the APE course or seminar and received support from APE specialists, physiotherapists, psychologists, but very few PE teachers had these courses or seminars and support from these specialists.

Based on results of Taliaferro's (2010) study it was identified that having APE courses had a statistically significant effect on the level of SE of the teachers of physical education. The systematic literature review on inclusion in physical education (1975–2015) by Tant and Watelain (2016) revealed that one of the major limitations for inclusive education is APE training. A qualitative study by Tant and Watelain (2016) had previously shown "that PE teachers needed regular APE training focused on inclusive didactic strategies and pedagogical adaptations and the support of teachers with inclusion experience (co-teaching) throughout their careers (starting at the university level)" (p. 11). Pedagogical training towards inlusion students with SEN could refer to the use of the following: "a mastery climate that facilitates students' concentration on their own learning process rather than on the performance; cooperative learning, which is the instructional use of small groups of students who must work together to achieve a common goal; peer tutoring is an instructional strategy that provides a trained peer tutor to support a student with SEN in PE courses" (p. 12) (Tant & Watelain, 2016). The study of Marimuthu and Cheong (2015) highlights the necessity of adequate knowledge for teachers working in inclusive education conditions and argue that "inclusive

education requires well equipped, knowledgeable and competent teachers who are able to foster the required values, confidence and support in students with SEN, thus preparing them to become capable citizens" (p. 317). Hassan, Ahmed, and Alasmari (2015), who studied the attitudes of special educators towards educating students with autism in regular settings, found that teachers who studied in special courses on inclusive education demonstrated more positive attitudes compared to those teachers who had not studied in special courses. Healy et al. (2017) found in their study that pre-service PE students typically acquired one course devoted to APE and argued that this was insufficient preparation for the successful inclusion of students with disabilities in PE. Taliaferro and Harris (2014) also indicated that a one-day workshop did not have a significant impact on physical educators' SE toward inclusion. Inclusion of Adapted Physical Education into the teachers' training programs has a positive effect on PE and other teachers' attitudes towards inclusion of children with disabilities and increases the self-efficacy sense to effectively include students with disabilities in class (Healy et al., 2017; Taliaferro et al., 2015). Recent studies also confirmed the positive effect of APE knowledge (Kwon & Block, 2017) and its importance (Hutzler & Barak, 2017) for teacher's SE in developing an inclusive educational environment for students with disabilities.

Beamer and Yun (2014) and Taliaferro (2010) indicated that the support got for including students with ASD into general PE was mostly provided by a special education teacher and teacher assistants. According to Beamer & Yun's (2014) survey, almost 80% of PE teachers received the special educator's support in cases when students with ASD had to be included in general PE classes. Such support was available for only about 47% of the PE teachers participating in the current study and this was also the most common support reported. When comparing the data concerning the support from teacher assistants reported in Beamer and Yun's (2014) survey and in our survey, differences were noticeable. In the Lithuanian case, only about 15% of the teachers received a teacher assistant, whereas 72% of respondents in Beamer and Yun's (2014) study stated that such support was available for them. In addition, 76% of teachers interviewed in Beamer and Yun's (2014) survey reported that APE specialists' support was available, should the teacher need it. In Lithuanian case, only about 11% of PE teachers said that the APE specialist support was available to them. It has also been found that received support from a physiotherapist (9%) and a psychologist (6%), significantly positively influence PE teachers' SE level, but only very few PE teachers received this support.

When comparing the US and Lithuania, Lithuanian teachers lack specialists' support.

Sources of self-efficacy as predictors. Identification of the relationship between the SE scores and ME, VE, SP, and PS scores enabled to disclose what kind of sources and combination of the sources made the largest impact on the PE teachers' SE levels when including students with ASD into the class activities. Results of our analysis confirmed the results of research made by Bandura (1986) and other scientists (Block et al., 2016; Klassen & Tze, 2014; Lent & Hackett, 2009; Ozyilmaz et al., 2018; Taliaferro, 2010; Taliaferro et al., 2015; Tschannen-Moran & McMaster, 2009; Urton et al., 2014) that mastery experiences play an important role in developing the SE level. It was also found that PE teachers with higher SE feel less stress and worry when they have to include a student with ASD into the general PE class (Taliaferro, 2010). This result shows that developing physical education teachers' SE toward inclusion of students with ASD, it is important to enhance physical status, reduce stress and negative emotional proclivities, and correct misinterpretations of bodily states (Bandura, 2006). The results of the regression analyses showed that such sources of self-efficacy as combination of ME, PS and VE had the most effective impact on developing PE teachers' SE level toward inclusion of students with ASD. A study conducted by Urton et al. (2014) confirms a relationship between a teacher's mastery and vicarious experiences and his/her SE towards inclusive education.

Self-efficacy, behaviour, and perceived challenges. Results of the analyses showed that a higher level of SE enables to create a more inclusive environment for students with ASD in a general PE class; and vice versa, the frequency of creating an inclusive environment for students with ASD increases the PE teachers' SE. The correlation between SE score, BEH and PCH scales leads to the presumption that the more often and inclusive environment for students with ASD in a general PE class is created, the less importance is given to situations that hinder the delivery of a meaningfully inclusive PE class. The correlation analysis showed that the challenges teachers face have the significant influence on SE level. Taliaferro's (2010) performed multiple regression also indicated that the linear combination of SE and perceived challenges were significantly related to behaviour. According to Bandura (1997), we can assume that PE teachers with high levels of SE will be more likely inclined to include students with ASD into physical activities and more likely to attempt difficult tasks to ensure the qualitative inclusion of students with ASD into physical education classes.

Path model. Based on correlation and multiple regression analysis results, path model was formed, which helped to reveal causal relationships between sources and level of self-efficacy, level of SE, behaviour and perceived challenges. The results of path analysis confirmed such a model for the development and influence of SE in behavioural work in an inclusive PE class: Lithuanian PE teachers' SE level toward inclusion students with ASD is most affected by mastery experience, vicarious experience and physiological state; PE teachers' behaviour and perceived challenges depend on the influence of those sources on the SE level; behaviour is related with perceived challenges, that is as often as possible PE teachers create an inclusive learning environment the less they can see the challenges that can make it difficult for students with ASD to be included in physical activity (Taliaferro, 2010).

Taking into account the results of this model and other results of this research, it would be possible to formulate the following strategy for educating self-efficacy of physical education teachers: continuous APE courses or seminars based on mastery experiences and vicarious experiences; additionally, methods to enhance the psychological state of PE teachers; the team of specialists for support (APE specialist, physiotherapist, psychologist) is ensured.

Challenges. An analysis of challenges' scale was performed in order to identify the challenges most often faced by Lithuanian PE teachers. This analysis was carried out on different PE teachers groups, according to whether they had or not a student with ASD in their PE class. Such an analysis has been carried out as it helps to understand the difficulties faced by PE teachers who have already had students with ASD in their PE classes and what difficulties PE teachers think they would face when including students with ASD in PE classes. The analysis revealed that the main challenges for both groups of PE teachers are associated with the management of a big class with lot of students, and lack of support. In addition, teachers who had students with ASD in their PE classes experienced one of the most common difficulties because they did not have appropriate equipment; and teachers who did not have students with ASD in their PE classes considered having limited training on working with students with ASD would also cause serious difficulties The obtained results lead to the conclusion that multiple classes in the gym and large class sizes are the biggest barriers for the inclusion of students with ASD into general PE class. Unianu (2012) suggests that decreasing the number of students in one class is a very important factor for creating a more inclusive

environment. Such activities as the assurance of the necessary support to the teacher, adequate time allocation to prepare the educational activity plan and assurance of interactive partnerships between teachers, students, teachers and parents are also very important when creating inclusive education environment. However, in their study on special educators' attitudes towards educating students with autism in regular settings, Hassan et al. (2015) did not find any significant differences in the attitudes of special education teachers towards educating students with autism in regular settings according to the class size. Obrusnikova and Dillon (2011) found that in the case of including students with ASD in PE class, PE teachers most often experience challenges related to cooperative, competitive, and individualistic learning situations. Obrusnikova and Dillon (2011) found that when including children with ASD in PE classes, PE teachers most often experience challenges related to cooperative, competitive, and individualistic learning situations. Obrusnikova and Dillon (2011) concluded that PE teachers must acknowledge potential teaching challenges such as planning for and addressing inattentive and hyperactive behavior, social behavior difficulties, and emotional regulation difficulties.

4.6. The situation study about students' attitudes towards including peers with disabilities into general physical education classes

The purpose of this study was to identify the prevailing attitudes of students in Lithuanian schools to the inclusion of classmates in the general physical education classes and personality attributes which influence their attitudes.

The analysis of statistical indicators revealed that only about one third of students indicated that there were students with disabilities in their physical education and other classes. Taking into account this situation, the analysis of the students' attitudes towards the inclusion of peers with disabilities (ID, PD and VI scale) in the general physical education classes revealed that the students' attitude score towards the inclusion of students with disabilities in the general physical education classes more often chose the answer probably yes talking about the possible inclusion. This indicates that the students were not sure whether they would act the same as they thought. Comparing the results of this study with other researchers' data it was found that in US (Block,

1995; McKay et al., 2015) and Israel (Hutzler & Levi, 2008) the score was also 3 (probably yes), and in countries such as Spain (Cordente-Mesas et al., 2016), the Czech Republic (Kudláček et al., 2011; Liu et al., 2013), Greece (Arampatzi et al., 2011; Bebetsos et al. 2014; Bebetsos et al. 2013; Panagiotou et al., 2006), Portugal (Campos et al., 2013), and Belgium (Van Biesen et al., 2006) the score was more than 3, this means that students in these countries are more positively inclined to include students with disabilities in the PE classes. By analysing the findings from the General attitude and Sport Modification attitude subscales, it was observed that the General attitude subscale score tended to be more negative and the attitude score of the subscale Sport modification tended to be more positive. Based on this data, we can assume that students are not positive about the inclusion of students with disabilities in their physical education classes, but when asked about changes in games, their attitudes were more positive. The changes made during the game were interesting for them, thus their attitudes changed positively. The results of studies conducted in other countries were different: some researchers found that the attitudes towards including students with disabilities in the general physical education classes were more positive than the attitudes towards changes in the sports games (Cordente-Mesas et al., 2016; Hutzler & Levi, 2008; McKay et al., 2015), in other studies, students' attitudes to changes in game rules were more positive than students' attitudes towards inclusion to PE classes (Block, 1995; Bebetsos et al., 2014; Campos et al., 2013; Kudláček et al., 2011; Panagiotou et al., 2006; Papaioannou et al., 2013; Papaioannou et al., 2014; Van Biesen et al., 2006; Xafopoulos et al., 2009).

Comparing the data obtained between the scales, students' attitudes were more positive towards inclusion of peers with ID and PD than the ones with SEN.

Analysing the attitudes of students towards inclusion of their classmates with disability to the general physical education class according to the demographic data, it was found that girls' attitudes were more positive than those of boys. Many researchers also found that girls' attitudes were more positive than those of boys (Arampatzi et al., 2011; Bebetsos et al., 2014; Block, 1995; Campos et al., 2013; Van Biesen et al., 2006). However, data analysis performed by gender show that in some studies boys tend to have more positive attitudes towards changing game rules than girls (McKay et al., 2015; Xafopoulos et al., 2009). In reviewing the research on students' point of view towards the inclusion of students with SEN in the general PE classes, it was found that the more frequent interaction of students

with SEN students (Arampatzi et al. 2011; Kudláček et al., 2011; Obrusníkoková et al., 2003; Seymour et al., 2009) and personal experience with persons with disabilities (family member, friend) had a positive impact on their attitudes to the inclusion of these students (Block, 1995). The results of the Lithuanian situation survey showed that students who did not have peers with disabilities in physical education and other classes had more positive attitudes towards inclusion than those who did have this experience. Such an approach is also seen in a study conducted by Israel scientists (Hutzler & Levi, 2008). The personal experience (friend or family member) had no significant impact on the attitudes, but the results indicate a positive trend in attitudes. Also Hutzler and Levi (2008) found that there was no difference in attitudes between children who participated in sport classes and those who did not, and that children who had previous exposure to children with disability exhibited reduced willingness toward including them in physical education classes. The results of the Lithuanian situation survey showed that students who always wanted to win and got very upset due to defeat, rated students with ID and PD in sports games more negatively than the ones having lower levels of competitiveness. Meanwhile, there was no significant difference between the attitudes of students with a very high competitive level and lower levels of competitiveness, while including students with VI. Block (1995), McKay (2013), and Van Biesen et al. (2006), also found that students who considered themselves as kind of competitive or non-competitive were more positive towards including peers with disability in the PE classes and changes in the game rules than students who considered themselves very competitive.

Correlation analysis on all scales and subscales confirmed that attitudes depended on gender, age (younger students were more positive towards students with disabilities than older students), and the inclusion of students with disabilities in general classes other than physical education (students who did not have students with disabilities in general classes, had more positive attitudes than those students who had). It was also found that the inclusion of students with ID and VI in the physical education classes had a significant impact on the negative attitudes to the changes in the sport game that are needed to include the students with VI into common game (VI scale). The analysis showed that lower levels of competitiveness had a positive influence on the attitudes of students to changes in the sports games to include students with ID and PD in the game.

Results of a multiple regression analysis for the ID scale and general physical education attitude subscale data showed significant models of gender, age and having disabled peers in general education classes. Results of a multiple regression analysis for the sport modification subscale revealed a significant model of gender and age components. A stepwise regression analysis performed using data from the PD common scale, general attitude, and sport modification attitude subscales revealed that students' attitudes depended on gender, age, and having classmates with disabilities in general education classes. Regression analysis performed using VI common scale and sport modification attitude subscales data revealed that students' attitudes depended on gender, age, and having classmates with disabilities in general education classes. Results of a multiple regression analysis for the general attitude subscale showed a significant model of gender and age components. Block's (1995) regression analysis results also showed that general attitudes towards inclusion in physical education were affected by such personality attributes as school attendance, gender, and having a family member or close friend with a disability, while sports specific attitudes were affected by only one attribute - having a family member or a close friend with disability.

According to the results of the Lithuanian situation study, it is necessary further to develop this field of study and take steps to change the attitudes of Lithuanian students towards the inclusion of students with disability in the general physical education class. One of the most effective ways in the US and European countries is to organize Paralympic school days in general education schools (Liu et al., 2010; McKay, 2013; McKay, Block, & Park, 2015; McKay, Haegele, & Block, 2018; Panagiotou et al., 2006; Van Biesen et al., 2006; Xafopoulos et al., 2009) and summer camp (were the Disability Camp Program is applied) (Papaioannou et al., 2014) for the non-diabled students. According to Papaioannou et al. (2014), an inclusive summer camp could be organized and its impact on the attitude of students could be evaluated.

4.7. The educational experiment: the effectiveness of two educational strategies for the development of physical education teachers' self-efficacy creating inclusive learning environment

The aim of this study was to evaluate two strategies used for building PE teachers' self-efficacy and to analyse their effectiveness. The results of the experiment will also help to determine which training method is the most suitable for building general PE teachers' skills to include students with disabilities into general physical education classes.

The first strategy was based on the 18-hour online APE course and its delivery, and the second strategy was based on the 40-hour contact APE course and its delivery. Two experimental PE teacher groups and one control group were formed. The control group did not receive any training. Three student groups trained by PE teachers in the aforementioned groups were also formed. Changes in students' attitudes towards the inclusive PE classes were evaluated with respect to the changes in PE teachers' sense of self-efficacy during the intervention. The change in students' attitudes enabled to evaluate the effect of PE teacher's participation in the training course on students' behaviour, namely on students' attitudes towards the inclusion of classmates with intellectual and physical disabilities as well as visual impairment into a regular PE class. Thus the evaluation of the change in students' attitudes was used as one of the indicators of strategy effectiveness.

The analysis of the effect of the first strategy (delivery of the 18-hour online APE course) revealed that PE teachers' sense of self-efficacy while including students with ID, PD, VI and ASD significantly improved. The inter-comparison of data of the scales showed that the 18-hour online APE course had a positive effect on PE teachers' sense of self-efficacy for the inclusion of students with PD and ASD. The analysis of the data of teachers who participated in the 40-hour contact APE course revealed a significantly strengthened sense of self-efficacy when including children with ID, PD, VI and ASD. The greatest effect of this course was observed in increasing PE teachers' self-efficacy when including students with ASD, PD, and VI into the activities of the regular PE class. In his study De Boer et al. (2010) reported that teachers' attitudes towards inclusion were related to the type of disability: teachers were less apt to include students with learning disabilities, AD/HD and other behaviour problems and more apt to include students

with physical disabilities and sensory impairments. The comparison of the results obtained in our study with the results reported by de Boer et al. (2010) leads to the conclusion that PE teachers lack practical knowledge when dealing with more severe and more complicated disabilities, and they are not confident in relying on their skills both to include students with these disabilities and to form a positive attitude towards the inclusion of these students in general education classes. In a similar study Sierra et al. (2016) found that an 18-hour training program for an inclusive physical education had a greatest effect on PE teachers' self-efficacy in including students with ID, although high factors of positive effect were also found in PD and VI scales. Teachers also need support in the class when including students with more severe or rarer disabilities. Umhoefer et al. (2015) argue that general PE teachers who receive little training or support from specialists feel lack of self-confidence, frustrated and inadequate at dealing with the unique needs of students with disabilities, especially in the areas of severe physical limitations. This frustration may affect the general PE teachers' efficacy level when working with students with disabilities; in the meantime teachers with higher teaching efficacy are more likely to believe they can make a difference with their students (Umhoefer et al., 2015). One of the proposed ways to help PE teachers face the challenges is to have an itinerant adapted physical education (APE) specialist available to provide consultation and support (Obrusnikova & Kelly, 2009; Umhoefer et al., 2015). As Self-efficacy theory suggests, support areas such as mentoring through vicarious experience play a significant role in developing a person's efficacy beliefs (Bandura, 1977).

The analysis of PE teachers' control group data revealed that PE teachers' sense of self-efficacy in including students with ID, PD and VI decreased, although insignificantly, whereas the analysis of ASD scale data revealed that PE teachers' sense of self-efficacy significantly increased. In this case the intervention period had a significant effect in the sense of self-efficacy of control group PE teachers only in the inclusion of students with ASD. As control group PE teachers had a right to attend other courses/workshops during the intervention period, such a result might have been influenced by the teachers' personal initiative to attend courses/workshops on the education of students with SEN. The analysis of demographic data given in questionnaires before and after the intervention showed that the number of control group teachers who attended a 6-hour workshop was on

education of children with ASD. Also, based on the analysis of demographic data, it can be presumed that control group PE teachers had chosen the workshop on the education of children with ASD due to increasing numbers of students with ASD in schools. Basing on the results of our study and the findings of Taliaferro and Pilkington Harris' (2014) study, where one-day workshop on PE teachers self-efficacy towards inclusion of students with ASD was given, a short workshop or seminar may also have a positive effect on PE teachers' sense of self-efficacy.

The comparison of changes in self-efficacy indicators of PE teachers who took an 18-hour online APE course and PE teachers who took a 40-hour contact APE course during the intervention period revealed that the 18-hour online APE course had a greater effect on PE teachers' sense of self-efficacy in including children with ID into a regular PE class that the 40-hour contact APE course; on the other hand the 40-hour contact APE course had a bigger effect on PE teachers' sense self-efficacy in including students with PD, VI and ASD. The comparison of changes in the sense of self-efficacy of PE teachers who took APE courses with the sense of self-efficacy of control group PE teachers in including students with ID, PD and VI into a regular PE class revealed that the delivered APE courses had a significant effect on PE teachers' sense of self-efficacy. The comparison of changes in the sense of self-efficacy of PE teachers who took APE courses with the sense of self-efficacy of control group PE teachers in including students with ASD into a regular PE class revealed that although control group PE teachers had a 6hour seminar on the education of students with ASD, the knowledge gained in APE course had a stronger effect on PE teachers' sense of self-efficacy. According to Adapted Physical Education Manual of Best Practices (Silliman-French, 2005), an APE specialist should provide consultation services and in-service education to a general PE teacher. These actions, along with appropriate modelling, encouragement, and support, may assist in providing the action and influence teacher efficacy when working with children with SEN in a physically active setting (Silliman-French, French, Kinnison, & Stephens, 2008). In return, the general PE teachers may be more receptive to making the adaptations necessary for successful inclusion of students with SEN in their classroom. Teachers with higher teaching efficacy tend to be more receptive to implementing new instructional practices (Guskey, 1988) and provide a more active effort to address difficult challenges (Bandura, 1977).

On the basis of these results we may conclude that the online APE course is

effective only in cases when teachers have a frequent experience of including children with certain SEN. In this study it was experience with ID students and specific as well as concentrated theoretical and practical knowledge available to the teacher at the time convenient to him/her. The results of the study by Kwon and Block (2017) confirm the findings of our study that APE e-learning programme had a positive effect on PE teachers' performance. This form of knowledge transfer is also more convenient and preferable by working teachers in terms of time. Delivery of APE knowledge in the e-learning form is based on self-study and teachers' motivation to develop professionally and update the knowledge. The results of this study and the study by Kwon and Block (2017) reveal that the delivery of knowledge on inclusion and APE in the virtual learning environment, regular updating of this knowledge and a possibility for teachers to share and consult with APE specialists when specific challenges have to be overcome can effectively build the teachers' confidence in their abilities to create an inclusive environment in the class. The study results revealed that a contact APE course was effective in those cases when PE teachers had no knowledge and experience about the inclusion of students with SEN, when they faced a rarer or more severe SEN and also in the case of unsuccessful previous experience of including students with special needs into a regular PE class. This leads to a low sense of self-efficacy and builds a negative attitude towards the inclusion of students with SEN into a regular PE class. According to Sierra et al.'s (2016) study, an 18-hour contact training program for inclusive physical education for PE teachers, more than 80% of which did not have the basic APE knowledge or direct experience, had a big effect on their self-efficacy in including students with SEN into a regular PE class. This strategy based on the direct contact should consist of a cycle of workshops conducted by PE teachers with a strong sense of self-efficacy; the cycle of APE workshops should be based on practical training of PE teachers in designing and testing inclusive physical activities in the class; the cycle of APE workshops should include APE knowledge related to students with special educational needs in general or students with specific disability or impairment that creates special needs in education. For instance, in Lithuania, students with SEN are classified into three major SEN groups (Students with disabilities, Students with difficulties, and Students with disadvantages in learning), which are further classified into subgroups of disability, impairment and learning difficulties. In this study the contact course on APE covered four different groups of disabilities (ID, PD, VI, and ASD) with 8 hours devoted for each disability. During the training sessions PE teachers expressed a wish to have separate courses covering one disability in order to get deeper knowledge on the issue. The course was based on Sierra et al.'s (2016) Training Program for an Inclusive PE in terms of time (3 weeks, 2 days/w, 3 h/day) and content. In addition to information about inclusion, impairment, and adapted games and sports, the Programme also includes a 3-hour practical training with a para-athlete, which, in our opinion, significantly increased PE teachers' sense of self-efficacy. In Lithuania, the direct contact with a para-athlete was organised only in the training session on physical disability; subsequently, the self-efficacy results in PD scale were some of the highest. These results confirm the arguments of Bandura (1986) and other scholars (Tschannen-Moran & Woolfolk Hoy, 2007) that direct contact with people having a strong sense of self-efficacy increases your own self-efficacy. Personal factors, behaviour, and the environment that surrounds them determine human behaviour (Bandura, 1986). According to the findings of Tschannen-Moran and McMaster's (2009) study, treatment (information) 3-hour workshop based on verbal persuasion as the identified source of SE beliefs, and also treatment (information + modelling + practice + coaching) based on stronger master experience with the inclusion of follow-up coaching in the use of the new skill is the best approach for increasing teachers' self-efficacy. The abovementioned findings of other researchers and our study show that the combination of two strategies, namely the online and contact courses would give the best effect in developing PE teachers' self-efficacy. A consistent development of these two RE teacher self-efficacy building strategies would ensure continuous professional development of PE teachers. In the trainings PE teachers can gain direct and indirect experience, professional consultation, share their personal experience in building the inclusive education environment for students with special educational needs in a regular PE class. The results of an experimental study conducted by Tschannen-Moran and Mcmaster (2009) showed that the professional development format that supported mastery experiences through follow-up coaching had the strongest effect on the sense of self-efficacy. Researchers suggested that professional development programs that aimed to support teachers' ongoing utilization of new knowledge regarding effective practice needed to develop a delivery system characterized by the provision of continued support and follow-up after initial training (Tschannen-Moran and Mcmaster, 2009). Through consistent implementation of these two PE teachers' self-efficacy building strategies, teachers

would not only gain APE knowledge and practical skills but also develop such competencies and collaboration, initiative and creativity. The results of Umhoefer's et al. (2015) revealed that perceived teacher self-efficacy was the highest with the collaborative method used. De Boer et al. (2010) and Fisher (2017) concluded that teachers with inclusive education experience show significantly more positive attitudes than teachers with less or no experience in inclusive education, and that additional teacher training in educating students with special needs in regular education leads to more positive attitudes and willingness to implement inclusive education. To ensure that teacher trainees develop positive attitudes towards inclusion, the educational and academic systems will have to develop teacher training programs that do not distinguish between inclusion teachers and mainstream teachers, because it has been proven that both inclusion teachers and mainstream teachers hold the same beliefs and attitudes towards inclusion (Fisher, 2017). Researchers Umhoefer et al. (2015) from Texas conducted a survey to identify the effects that consultation, itinerant, and collaborative APE service delivery options have on teacher efficacy towards working with children with SEN in a regular PE class. According to Bandura (1977), a collaborative model, by design, includes team teaching, class plans, accommodations, modifications, modelling, hands-on assistance, and encouragement, so it is reasonable to assume these factors play a direct role in the increase of general PE teachers' efficacy, which makes sense as these are sources of efficacy beliefs.

The change in students' attitudes towards the inclusions of classmates with ID, PD and VI into a regular PE class before and after the implementation of strategies is another indicator used to measure the effectiveness of PE teacher self-efficacy building strategies. The analysis of student attitude indicators prior and post the 18-hour online training strategy implementation revealed a positive change in students' attitudes towards classmates with ID, PD, and VI; however, the statistically significant effect was observed only in the inclusion of students with intellectual disability into a regular PE class. We believe that the difference in student attitudes towards disabilities resulted from direct experience both of teachers and students contacting people with intellectual disabilities. The analysis of the indirect effect of the 40-hour contact APE course on student's attitudes towards classmates with ID, PD, and VI revealed a positive and significant change. Comparing the attitudes of the first experimental group and the second group of students after the experiment, it was found that teachers who participated in the 40-

hour contact APE course had a more significant influence on the attitudes of students than the teachers who participated in the 18 h online course. This could be explained that during the implementation of these strategies we did not control the mastery experiences task among PE teachers, therefore the frequency and type of activities used by PE teachers are not known. The analysis of the change in control group students' attitudes towards inclusion of classmates with ID, PD, and VI revealed statistically significant downwards moves. When students are informed that classmates with disabilities will participate in the ordinary PE class and no actions are taken to help them understand the process of inclusion in the PE class, a negative attitude towards the inclusion of peers with disability is formed among students. The scientists think that students' specific training could generate more positive general (Vickerman, 2007) and modified behaviours towards their peers (Bebetsos et al., 2014). The effectiveness contributed to the notion that if proper teaching conditions in regular PE classes are provided, the inclusion of students with disabilities does not negatively affect students without disabilities in terms of motor skills learning, on-task behaviour, or social acceptance (Bebetsos et al., 2014; Block & Zeman, 1996; Obrusnikova, & Dillon, 2012; Vogler, Koranda, & Romance, 2000; Obrusníková et al. 2003). When general PE teachers are not adequately prepared, inclusion can become a negative experience for students with and without disabilities (Goodwin, 2001; LaMaster, Gall, Kinchin, & Siedentop, 1998).

The results of experimental student groups could have been influenced by different associative attitude formation mechanisms, which were influenced by the respective 18-hour and 40-hour APE courses attended by their PE teachers. The intervention applied to PE teachers and its influence on students' attitudes towards their disabled classmates participating in regular PE class and certain games depended on the knowledge absorbed in the courses and the effect of this knowledge on their sense of self-efficacy. We observed a trend that PE teachers' stronger sense of self-efficacy caused a more positive attitude among students and vice versa, PE teachers' weak sense of self-efficacy caused a negative attitude of students towards the inclusion of disabled peers into a PE class. It was also observed that less practical experience gained by PE teachers who took the 18-hours online APE course the attitudes of their students to classmates with PD and VI did not change significant. Of course, the sense of self-efficacy of teachers became significantly stronger after the 18-hour online APE course; however it was not

strong enough to influence the change of their students' attitude to classmates with PD and VI. It can be assumed that the knowledge gained in the 18-hour online APE course increased PE teachers' confidence in their skills, but the application of those skills in practice was not sufficiently effective to have a positive effect on students' attitudes. Researchers (Beamer & Yun, 2014; Hutzler & Barak, 2017; Marimuthu & Cheong, 2015; Obrusnikova & Kelly, 2009; Sierra et al., 2016; Silliman-French et al., 2008; Tant & Watelain, 2016; Umhoefer et al., 2015) argue that PE teachers, who start working in an inclusive environment, need an APE specialist's support. The APE specialist assisting a PE teacher in the classroom would help to deal with hardships and challenges caused by the lack of knowledge about certain psychological factors and relevant skills. The support would build PE teacher's self-efficacy and create the environment, where positive attitudes of students towards the inclusion of classmates with SEN into a regular PE class would develop. Researchers Corneille and Stahl (2018) argue that in social cognition and attitude research, associative attitude learning is typically considered a slow-pace mechanism that automatically registers mere co-occurrences between stimuli, and in contrast, propositional or rule-based learning is often thought to include the nonautomatic encoding of qualified links between stimuli. Critical dimensions included in this distinction are distinct conditions under which attitudes are formed and distinct mental mechanisms through which they operate (Corneille & Stahl, 2018).

A correlation analysis prior and post the intervention was done to investigate the relationship between PE teachers' self-efficacy and their students' attitudes. For the analysis, the students' attitudes were divided into two factors on the basis of the structure of the CAIPE questionnaire scales: students' attitudes towards the inclusive PE class and students' attitudes towards the changed rules of the game. A positive relationship between PE teachers' self-efficacy and students' attitudes prevailed in the analysis. This relationship ranged from weak to strong depending on the survey subject groups and the type of disability. The analysis also revealed that after the intervention the relationship became stronger in all groups. After the intervention a stronger positive relationship between PE teachers' SE and their students' attitudes towards the changed rules of the game than the relationship between PE teachers' SE and their students' attitudes towards the inclusive PE class was observed in 18-hour online and 40-hour contact course groups. The comparison of the groups revealed that the strongest relationship between PE teachers' SE and their students' attitudes was in the control group and in 40-hour contact course group. The obtained correlation analysis results lead to the conclusion that PE teachers' assurance in their capabilities to include students with disabilities into a regular PE class and changes in their sense of self-efficacy are closely related with the building of their students' attitudes towards the inclusion of classmates with disabilities into the regular class. The analysis also revealed that PE teachers' improved sense of SE after APE courses had a more positive effect on students' attitude towards the changed rules of the game than on the inclusive PE class. Teachers' self-efficacy refers to the extent to which teachers believe their effort will have a positive effect on their students' abilities, in redirecting their students' behaviour, and on overall student achievement (Al-Alwan & Mahasneh, 2014; Ashton & Webb, 1986). Teacher's sense of efficacy had a strong positive effect on student performance (Tschannen-Moran et al., 1998). The results of Al-Alwan and Mahasneh (2014) study revealed that there was a significant relationship between teachers' self-efficacy and students' attitudes towards school. The teachers with a strong sense of efficacy exhibit high levels of planning, management, and organization, are open to new ideas and are more willing to experiment with new methods to better meet the needs of their students; also exhibit enthusiasm for instruction, are more committed to their profession, and likely exert a positive influence on students' attitudes towards school (Al-Alwan & Mahasneh, 2014).

4.8. Generalization

Based on the analysis of the results of the educational experiment, it can be confirmed that the model developing the physical education teachers' self-efficacy to create the inclusive environment based on the ideas of Self-efficacy (1977) and the Social Cognition Theories (1986), is effective in real conditions: lecturers' transferred knowledge, both in direct contact and online, has positively influenced the self-efficacy of physical education teachers to create an inclusive educational environment, and the increased self-efficacy of physical education teachers has positively influenced students' attitudes towards inclusion of peers with disability into physical education class.

Summarizing the results of the study of the self-efficacy situation of physical education teachers, the results of the students attitudes and the results of the

educational experiment, a strategic model (Figure 17) can be formed that can effectively create an inclusive educational environment for students with disabilities in a regular physical education class.



Figure 17. Strategic model for developing inclusive educational environment in a physical education class

Based on this model, teachers' self-efficacy towards inclusion of students with disabilities can be effectively developed in three ways based on the Self-efficacy Theory (Bandura, 1977): (1) by creating a website of adapted physical activity; (2) developing continuous workshops / courses on adapted physical activity, and (3) developing a website for adapted physical activity and developing ongoing workshops/courses on adapted physical activity. The self-efficacy of the physical education teachers developed in these ways will influence the surrounding environment (attitudes of the students towards inclusive educational environment, it is necessary to provide them with support of such specialists as an adapted physical activity specialist, teacher assistant and psychologist (Figure 17). Interaction between all components of this model will create an inclusive educational environment for students with disabilities and without disabilities.
CONCLUSIONS

Using reliable and valid instruments, the study revealed that in Lithuanian general education schools, physical education teachers face children with intellectual, physical disabilities, visual disorders, and autism spectrum disorders in physical education classes. However, by including these children in a regular physical education class and joint sports activities teachers of physical education cannot ensure a quality physical education program and create an inclusive educational environment for all the participants. This is due to the moderate teachers' self-efficacy level to work with students with disabilities, visual impairments, and autism spectrum disorders), lack of knowledge about adapted physical education, insufficient support from other professionals, inability to manage big classes with a lot of students.

A more detailed analysis has shown that PE teachers' self-efficacy in working with students with intellectual disabilities is positively influenced by: adapted physical education knowledge, support from an adapted physical activity specialist and a physiotherapist; having friends with intellectual disability.

PE teachers' self-efficacy in working with students with physical disabilities is positively influenced by: adapted physical education knowledge; support from an adapted physical activity specialist, an assistant teacher and a physiotherapist; having friends with physical disability; the professional experience working with students with physical disabilities.

PE teachers' self-efficacy in working with students with visual impairments is positively influenced by: adapted physical education knowledge; the professional experience working with students with visual impairments; support from an adapted physical activity specialist, an assistant teacher, a special education teacher and a physiotherapist; having friends with visual impairments.

PE teachers' self-efficacy in working with students with autism spectrum disorders is positively influenced by: adapted physical education knowledge; the professional experience working with students with autism spectrum disorders; support from an adapted physical activity specialist, a psychologist and a physiotherapist; having friends with autism spectrum disorders.

The analysis carried out, based on Bandura's Self-efficacy Theory (1977), revealed that such a combination of (a) the ability to successfully include a student

with disability (mastery experience) for as much time of a class as possible, (b) a lower level of stress/nervousness (physiological states); (c) seeing more successful examples of creating an inclusive educational environment in the field of physical education (vicarious experiences) has the greatest impact on the self-efficacy of PE teachers towards inclusion students with disabilities. This analysis has also revealed that the higher the level of self-efficacy, the more often PE teachers have tried to create an inclusive learning environment for students with disabilities (modifying equipment, activities, instructions, rules, creating a safe environment, promoting social interactions, managing behaviours, assessing motor skills, collaborating effectively with others, motivating the student) and less noticing situations that can make it difficult to include a student with disability into physical activity.

Analysis of the challenges faced while including students with disabilities into regular PE classes has revealed that teachers who have already have experience in working with disabled students have identified three of the most complicated challenges: multiple classes in the gym; large class sizes; lack of aid or support.

Teachers who had not worked with students with disabilities before identified nine most complicated challenges for including students with disabilities into regular physical education program: multiple classes in the gym; large class sizes; limited training on disabilities; lack of aid or support; students having behavioural problems; lack of appropriate equipment; the student's with disability skill level being very different from that of peers in the class; lack of the information about the student; the student's with disability problems staying on task.

The use of reliable and valid instrument in the study has revealed that the attitudes of children in mainstream schools are moving in the right direction towards inclusion of peers with intellectual and physical disabilities and visual impairments. Children positively evaluate the situation when the rules of the game should be changed in order to include peers with disabilities into a common game. However, the inclusion of children with disabilities into PE classes is viewed negatively. The analysis of the situation revealed that students' attitudes towards inclusion of peers with disabilities depend on:

• the type of the disability (more positive attitude is towards inclusion of peers with intellectual disability than with visual impairments);

- gender (girls have more positive attitudes than boys);
- age (younger children have more positive attitudes than the older ones)
- having experience with peers with disability in regular education and

physical education classes (children who had no experience with inclusion of peers with disability had more positive attitudes than those who had such experience).

• level of competitiveness (children who evaluate themselves as fairly or not competitive have more positive attitudes than children who evaluate themselves as very competitive);

The theoretical model that develops the self-efficacy of physical education teachers to create an inclusive educational environment has been approved through the educational experiment as an effective way to develop the self-efficacy of physical education teachers to create an inclusive educational environment. The theoretical model revealed that:

• 18-hour online Adapted physical education course is an effective alternative to educate the self-efficacy of physical education teachers towards inclusion of students with intellectual disability, physical disability, visual impairments, and autism spectrum disorders, but it does not provide sufficient capacity for a physical education teacher with the knowledge they have gained to influence the students' attitudes towards inclusion peers of with physical disabilities and visual impairments;

• 40-hour contact Adapted physical education course is an effective traditional knowledge transfer way to develop the self-efficacy of physical education teachers towards inclusion of students with disabilities (intellectual disability, physical disability, visual impairments, and autism spectrum disorders), and giving physical education teachers the ability to significantly influence students' attitudes towards inclusion of peers with intellectual disability, physical disability, and visual impairments into regular physical education classes;

• The results of the control group revealed that speaking about the inclusion of students with disability and not taking further preparatory steps for creating an inclusive environment in the classroom has a negative effect on the physical education teachers' self-efficacy and students' attitudes towards inclusion of peers with disabilities.

The theoretical model can be improved by including the element of the support from an adapted physical activity specialist, a teacher's assistant, and a psychologist.

RECOMMENDATIONS

In order to ensure the quality inclusion of students with disabilities in physical education classes, it is recommended to cooperate with the Ministry of Education of the Republic of Lithuania, municipal departments and school administrations to ensure that teachers of physical education have acquired adapted physical education knowledge and physical education teachers who include or plan to include students with disabilities in physical education classes received the support from adapted physical activity specialists, teacher assistants, and psychologists.

In cooperation with scientists and educational institutions responsible for the training and qualification of teachers, it is recommended to create Adapted Physical Education website and continuing Adapted Physical Education seminars/courses and programs for PE teachers and to evaluate their usefulness and impact on PE teachers' self-efficacy to create an inclusive learning environment for students with SEN in a physical education class.

It is recommended that teachers of general education schools were constantly interested in the knowledge and innovations of adapted physical activity in the context of Lithuania and other countries; took the initiative to develop an inclusive educational environment for students with disabilities in physical education classes (for example: spread positive mood, changed game rules more frequently, included theoretical and practical knowledge of Paralympic sports in the physical education program; more often organized inclusive sports competitions or other inclusive sports events).

Scientists are advised to further develop the field of physical education teachers' self-efficacy towards inclusion of students with disabilities by carrying out further self-assessment of physical education teachers according to different disability groups and levels; to develop strategies for increasing self-efficacy of physical education teachers towards inclusion of students with disabilities. Further studies, using not only quantitative methods but also qualitative research methods, are important for the evaluation of the impact of adapted physical education courses on the physical education teachers' self-efficacy towards developing an inclusive educational environment for students with disabilities in a regular physical education class. Based on the findings of the students' attitudes towards the inclusion of peers with disabilities in the regular physical education classes, it is recommended for scientists to further investigate this field of research in the broader field of studies and to study the influence of such interventions as Paralympic school days on students' attitudes towards inclusion of students with disabilities.

LIMITATION

This study did not assess whether there were students with disabilities (intellectual disability, physical disability, visual impairment, autism spectrum disorders) in those schools involved in the study. Also, this study would be reinforced if it had analysed how many children with disabilities (intellectual disability, physical disability, visual impairment, and autism spectrum disorders) had been included in PE classes during the last 5 years.

The homogeneity of the groups was not fully ensured during the educational experiment: in the experimental (40 h contact APE course) group of physical education teachers, the number of participants was lower (n = 14) than in the experimental (18 h online APE course) group (n = 22) and in the control group (n = 22). The student groups also consisted of unequal numbers of subjects: the experimental group consisted of 265 students, the second experimental group consisted of 114 students, and 196 students were in the control group.

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APPENDICES

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# by personal Attributes

Personal Attributes/according	Intellect	tual disabili	y scale	Physic	al disability	scale	Visual	mpairment	scale	Autism sp	ectrum disor	ders scale
to demographical duestions	Group I 18 h	Group II 40 h	Control group	Group I 18 h	Group II 40 h	Control group	Group I 18 h	Group II 40 h	<b>Control</b> group	Group I 18 h	Group II 40 h	Control
Gender	p = .28	<i>p</i> = .46	p = 39	p = .76	p = .33	p = .79	p = .13	p = .93	p = .62	p = .23	p = .74	p = .67
Age	p = .23	p = .22	<i>p</i> = .68	p = .65	<i>p</i> = .76	p = .97	p = .16	p = .74	p = .12	p = .69	p = .45	p = .92
Work experience (years)	<i>p</i> = .17	<i>p</i> = .15	<i>p</i> = .17	<i>p</i> = .61	<i>p</i> = .08	<i>p</i> = .27	<i>p</i> = .21	<i>p</i> = .45	<i>p</i> = .44	<i>p</i> = .63	<i>p</i> =.19	<i>p</i> = .43
APE course/seminar	p = .99	p = .94	p = .72	<i>p</i> = .94	p = .29	<i>p</i> = .48	p = .42	p = .09	<i>p</i> = .85	p = .50	p = .99	<i>p</i> = .78
Special pedagogical course/seminar	<i>p</i> =.96	<i>p</i> = .43	<i>p</i> = .22	<i>p</i> = .59	<i>p</i> = .52	<i>p</i> = .15	<i>p</i> = .39	69. <i>= d</i>	60' = d	<i>p</i> = .65	<i>p</i> = .84	<i>p</i> = .61
Inclusive experience	p = .15	<i>p</i> = .88	p = .99	p = .14	p = .87	p = .99	p = .29	p = .87	p = .29	p = .23	p = .06	p = .51
Personal experience	1	p = .07	<i>p</i> = .62	<i>p</i> =.14	p = .34	p = .54	p = .08	<i>p</i> = .52	1	<i>p</i> = .80	p = .36	<i>p</i> = .68

Personal attributes impact on self-efficacy of physical education teachers

Note. Non-parametric tests for Mann-Whitney U test were used to evaluate the differences in the mean of demographic questions.

attitudes
Personal attributes impact on the students

Darsons Attributas/according to	Intell	ectual disabili	ty scale	Phys	sical disability	scale	Visua	ıl impairment.	scale
I CI SUMAL ALL IDUCES ACCULUING W	Group I	Group II	Control	Group I	Group II	Control	Group I	Group II	Control
	18 h	40 h	group	18 h	40 h	group	18 h	40 h	group
Gender	p = .29	<i>p</i> = .43	<i>p</i> =.11	<i>p</i> = .29	p = .06	p = .06	p = .12	p = .27	p = .15
Age	<i>p</i> = .82	<i>p</i> = .98	p = .10	<i>p</i> = .69	p = .85	p = .07	p = .10	<i>p</i> = .34	p = .06
Had peer with disability in regular education class	<i>p</i> = .06	p = .40	<i>p</i> = .86	<i>p</i> = .06	p = .27	p = .39	<i>p</i> =.06	<i>p</i> = .12	<i>p</i> = .16
Had peer with disability in regular physical education class	90' = <i>d</i>	<i>p</i> = .53	<i>p</i> = .54	<i>p</i> = .73	<i>p</i> =.17	<i>p</i> =.60	<i>p</i> = .30	<i>p</i> =.06	<i>p</i> = .15
Had family member or friend with disability	р=.07	<i>p</i> = .50	<i>p</i> = .55	<i>p</i> = .06	<i>p</i> = .66	<i>p</i> = .64	90. <i>= d</i>	<i>p</i> = .13	<i>p</i> = .89
Note. Non-parametri	ic tests for M	ann-Whitney I	J test were use	d to evaluate	the differences	in the mean of	f demographic	c questions.	

## Appendix 1

**Appendix 2.** Comparison of Educational Experiment Groups According to the self-efficacy of the Physical Education Teachers and the Attitudes of the Students

Comparative Groups	Intellectual disability scale	Physical disability scale	Visual impairment scale	Autism spectrum disorders scale
Group II 40 h and group I 18 h	<i>p</i> = .98	<i>p</i> = .06	<i>p</i> = .36	<i>p</i> = .49
Group II 40 h and control group	<i>p</i> = .18	<i>p</i> = .26	<i>p</i> = .31	<i>p</i> = .12
Group I 18 h and control group	<i>p</i> = .07	<i>p</i> = .68	<i>p</i> = .99	<i>p</i> = .58

Comparison of physical education teachers groups according to the self-efficacy value

**Note.** The independent samples t-Test was used to evaluate the difference between the averages of the self-efficacy values

#### Comparison of student groups according to the attitude value

Comparative Groups	Intellectual disability scale	Physical disability scale	Visual impairment scale
Group II 40 h and group I 18 h	<i>p</i> = .08	<i>p</i> = .07	<i>p</i> = .31
Group II 40 h and control group	<i>p</i> = .07	<i>p</i> = .06	<i>p</i> = .10
Group I 18 h and control group	<i>p</i> = .07	<i>p</i> = .06	<i>p</i> = .08

Note. Mann-Whitney U test was used to estimate the differences between the averages of the values

Appendix 3. Self-Efficacy Scale for Physical Education Teacher Education Majors towards Children with Disabilities (SE-PETE-D)



# Situational-Specific Self-Efficacy and Inclusion Students with Disabilities in Physical Education

Directions: This survey is designed to investigate your self-efficacy towards including a student with an intellectual, physical, or visual disability into your high school general physical education program. We define self-efficacy as your personal judgment of your competence or your confidence in your ability to carry out a goal or task (Bandura, 1986). In this case, we want to find your personal judgment of how confident you are in your ability to accommodate a student with an intellectual, physical, or visual disability who is included in your general physical education classes. The competency scale for each question is from 1 (no confidence) to 5 (complete confidence). There are no right or wrong answers, and every physical educator will answer these questions differently. We only want to find out how confident you feel in your ability to accommodate a student with an intellectual, physical, or visual disability like the ones described below into your general physical education class. The survey ends with some demographic questions. We are not asking for your name or any identifying information, so your participation is completely anonymous.

# Part 1 – Intellectual Disability

Below you will see a description of a student with an intellectual disability. This will be followed by a series of questions about how competent/capable you feel about making certain accommodations for this student. You will then see a description of a student with a physical disability followed by another series of questions. Answer these questions as if this student is going to be in your general physical education class next week. The competency scale for each question is from 1 (cannot do at all) to 5 (highly certain can do).

#### *****

#### Description of Student with an Intellectual Disability

Noah is a high school student with an intellectual disability, so he doesn't learn as quickly as his classmates. Because of his intellectual disability he also doesn't talk very well, so sometimes it is hard to understand what he is saying. However, he will point or gesture to help people know what he wants. He also has trouble understanding verbal directions, particularly when the directions have multiple steps. Noah likes playing the same sports as his classmates, but he does not do very well when playing actual games. Even though he can run, he is slower than his peers and tires easily. He can throw, but not very far, and he can catch balls that are tossed directly to him. He likes soccer, but he cannot kick a ball very far, and he never can remember where to go on the field. He also likes basketball, but he does not have enough skill to dribble without losing the ball, and he is not coordinated enough to make a basket. He also does not really know the rules for basketball or other team sports, and he easily gets distracted and off task during the game.

#### *****

Please rate <b>how certain you are that you can do the things listed below</b> by
writing the appropriate number from 1–5 using the scale given below after each
question.

1	2	3	4	5
No	Low	Moderate	High	Complete
Confidence	Confidence	Confidence	Confidence	Confidence

Questions a-c: You are conducting physical fitness testing with your 9th grade physical education class of 30 students that includes Noah.

Confidence (1–5)

- a. How confident are you in your ability to keep Noah on task during fitness testing?
- b. How confident are you in your ability to modify the test for Noah?
- c. How confident are you in your ability to **instruct peers to help Noah** during fitness testing?

Questions d-h: You are conducting a team sport unit such as volleyball, basketball, or soccer to your 9th grade physical education class of 30 students that includes Noah. You are in the first week of the unit, and you are teaching the basic skills of the sport (ex, the bump, set, and serve in volleyball).

#### Confidence (1–5)

- d. How confident are you in your ability to **modify your instructions to help Noah understand what to do** when teaching sport skills?
- e. How confident are you in your ability to help Noah **stay on task** when teaching sport skills?
- f. How confident are you in your ability to **modify equipment** to help Noah when teaching sport skills?

- g. How confident are you in your ability to **modify the actual skills** to help Noah when teaching sport skills?
- h. How confident are you in your ability to **instruct peers to help Noah** when teaching sport skills?

Questions i–k: You are conducting a team sport unit such as volleyball, basketball, or soccer to your 9th grade physical education class of 30 students that includes Noah. You are in the last week of the unit, and you are now having your students play the actual game.

## Confidence (1-5)

- i. How confident are you in your ability to modify rules of the game for Noah?
- j. How confident are you in your ability to help Noah **stay on task** during the game?
- k. How confident are you in your ability to **instruct peers to help Noah** during the game?

# Situational-Specific Self-Efficacy and Inclusion Students with Disabilities in Physical Education

# Part 2 – Physical Disability

Below you will see a description of a student with a physical disability. This will be followed by a series of questions about how competent/capable you feel about making certain accommodations for this student. As was the case above, answer these questions as if this student is going to be in your general physical education class next week. The competency scale for each question is from 1 (cannot do at all) to 5 (highly certain can do).

#### *****

#### Description of a Student with a Physical Disability

Ashton is a high school student with a spinal cord injury. He cannot walk, so instead he pushes himself in his wheelchair to get around. Ashton likes playing the same sports as his classmates, but he does not do very well when playing the actual game. Even though he can push his wheelchair, he is slower than others and tires after pushing his chair for only 1–2 minutes. He can pass and serve a volleyball, but not far enough to get it over the net. He can catch balls tossed straight to him. However, he does not have the upper body strength to shoot a basketball high enough to make a regulation basket. Because he cannot use his legs, he cannot kick a soccer ball, but he can push the ball forward with his chair.

Please rate <u>how certain you are that you can do the things listed below</u> by writing the appropriate number from 1–5 using the scale given below after each question.

1	2	3	4	5
No	Low	Moderate	High	Complete
Confidence	Confidence	Confidence	Confidence	Confidence

*****

Questions a–d: You are conducting physical fitness testing with your 9th grade physical education class of 30 students that includes Ashton.

Confidence (1–5)

- a. How confident are you in your ability to **create individual goals for Ashton** during fitness testing?
- b. How confident are you in your ability to **modify the test** for Ashton?
- c. How confident are you in your ability to **instruct peers to help Ashton** during fitness testing?
- d. How confident are you in your ability to **make the environment safe** for Ashton during fitness testing?

Questions e-h: You are conducting a team sport unit such as volleyball, basketball, or soccer to your 9th grade physical education class of 30 students that includes Ashton. You are in the first week of the unit, and you are teaching the basic skills of the sport (ex, the bump, set, and serve in volleyball.

#### Confidence (1–5)

- e. How confident are you in your ability to **make modifications to sports skills** if Ashton cannot perform like his peers when you are teaching sport skills?
- f. How confident are you in your ability to **make the environment safe** for Ashton when teaching sport skills?
- g. How confident are you in your ability to **modify equipment** to help Ashton when teaching sport skills?
- h. How confident are you in your ability to **instruct peers to help Ashton** when teaching sport skills?

Questions i–I: You are conducting a team sport unit such as volleyball, basketball, or soccer to your 9th grade physical education class of 30 students that includes Ashton. You are in the last week of the unit, and you are now having your students play the actual game.

- i. How confident are you in your ability to modify rules of the game for Ashton?
- j. How confident are you in your ability to **modify equipment** to help Ashton during the game?
- k. How confident are you in your ability to **make the environment safe** for Ashton during the game?
- I. How confident are you in your ability to **instruct peers to help Ashton** when teaching sport skills?

# Situational-Specific Self-Efficacy and Inclusion Students with Disabilities in Physical Education

# Part 3 – Visual Disability

Below you will see a description of a student with a visual disability. This will be followed by a series of questions about how competent/capable you feel about making certain accommodations for this student. As was the case above, answer these questions as if this student is going to be in your general physical education class next week. The competency scale for each question is from 1 (cannot do at all) to 5 (highly certain can do).

#### *****

#### Description of a Student with a Visual Disability

Sofia is a high school student. She has severe visual impairment, so she can only see people and objects when they are really close to her. She likes physical activity, and her fitness level is comparable to her peers. She needs physical assistance to safely move around physical education settings. For example, she holds onto a peer's elbow and listens to her peer's auditory cues when she does the mile run. Also, her vision is not good enough to see demonstrations, so she needs verbal instructions and someone guiding her through the movement to understand how to perform a skill. When playing a team sport (e.g., basketball, volleyball, soccer), she needs someone with her for safety and to make sure she knows where she is on the field, and she needs a ball with auditory cues to know where the ball is during the game. Regarding her skill level, she cannot catch a ball, but she can throw or kick the ball towards an auditory target.
Please rate how certain you are that you can do the things listed below by								
writing theappr	opriate number	from 1–5 ι	using the scale	given below after				
each question.								
				_				
1	2	3	4	5				
No	Low	Moderate	High	Complete				
Confidence	Confidence	Confidence	Confidence	ce Confidence				

Questions a–c: You are conducting physical fitness testing with your 9th grade physical education class of 30 students that includes Sofia.

Confidence (1–5)

- a. How confident are you in your ability to **make the environment safe for Sofia** during fitness testing?
- b. How confident are you in your ability to **instruct peers to help** Sofia during fitness testing?
- c. How confident are you in your ability to **modify the fitness testing** requirements for Sofia during fitness testing?

Questions d–g: You are conducting a team sport unit such as volleyball, basketball, or soccer to your 9th grade physical education class of 30 students that includes Sofia. You are in the first week of the unit, and you are teaching the basic skills of the sport (ex, the bump, set, and serve in volleyball.

### Confidence (1–5)

- d. How confident are you in your ability to **modify instructions** to help Sofia when teaching sport skills?
- e. How confident are you in your ability to **instruct peers to help Sofia** when teaching sport skills?
- f. How confident are you in your ability to **modify equipment** to help Sofia when teaching sport skills?
- g. How confident are you in your ability to **make the environment safe for Sofia** during fitness testing?

Questions h–j: You are conducting a team sport unit such as volleyball, basketball, or soccer to your 9th grade physical education class of 30 students that includes Sofia. You are in the last week of the unit, and you are now having your students play the actual game.

### Confidence (1–5)

h. How confident are you in your ability to **make the environment safe** for Sofia during the game?

- i. How confident are you in your ability to **instruct peers to help Sofia** during the game?
- j. How confident are you in your ability to modify rules of the game for Sofia?

### Situational-Specific Self-Efficacy and Inclusion Students with Disabilities in Physical Education

### Part 4 – Demographic Questions

- 1. _____ Your age
- 2. _____ Your gender
- 3. _____ Your year in college (e.g., 2nd year, 3rd year, 4th year)
- 4. <u>Have you had a general physical education internship in a middle or high school?</u>
- 5. <u>Coursework in adapted physical education (APE) (e.g., 1 course, 2 courses, etc.)</u>
- 6. _____ Are you enrolled in an undergraduate minor or concentration in APE?
- 7. _____ Did your APE course have a practicum? (yes/no)
- 8. If yes to #5 above, was the practicum (check all that apply):
  - a. _____ working with a student with a disability 1-on-1 at your college/university?
  - b. ____ working with a small group of students with disabilities at your college/university?
  - c. ____ working with a student with a disability 1-on-1 in a local school?
  - d. ____ working with a small group of students with disabilities in a local school?
  - e. ____assisting a student being included in a general physical education class?
  - f. _____ volunteering for community sport such as Special Olympics?
- 9. What are your experiences with the following students with physical, intellectual, or visual disabilities in physical education or community sports?

	No experience	Once or twice	Several times
Intellectual disability			
Physical disability			
Visual disability			

10. What are your personal experiences with people with intellectual, physical, or visual disabilities?

	Family member	A friend	Someone at school
Intellectual disabil	ity		
Physical disability			
Visual disability			

Appendix 4. Physical Educators' Self-Efficacy Toward Including Students with Disabilities-Autism (PESEISD-A)



# Physical Educators' Self-Efficacy Toward Including Students with Disabilities-Autism (PESEISD-A)

Do you currently teach physical education? ____Yes ____ No (please do not continue)

Please provide your e-mail address:_____

**Directions:** This survey is designed to assess your judgment of confidence in your ability to safely, successfully, and meaningfully include a student with autism into your general physical education classes.

Below you will see a description of a student with autism. The description is followed by a series of questions about how you feel about performing certain tasks to accommodate this student. Answer these questions as if this student will participate in your general physical education class next week. There are no correct answers, and each person will answer these questions differently. We just want to know how confident you feel in your ability to safely, successfully, and meaningfully include a student with autism like the one described below into your general physical education class next week. The survey continues with questions about your past experiences including students with autism in general physical education classes, and ends with some demographic questions.

### **Description of Autism**

*A student with autism is someone who has:

(a) significant difficulties in social interactions with peers and teachers,
(b) significant difficulties in communication both in understanding what is said and producing verbal language, and
(c) unique, repetitive behaviors that interfere with learning and attending.

In physical education, most students with autism may have difficulties relating to peers, understanding directions, following changes in class routines, playing appropriately with equipment, and tolerating the noise level and space in the gym. In addition, students with autism may display inappropriate behaviors such as hand flapping, rocking, and wandering around the space.

*Modified from the DSM-IV-TR definition of autism (2000).

# Physical Educators Self-Efficacy Toward Including Students with Disabilities-Autism

This survey is designed to help us gain a better understanding of the things that create difficulties for teachers in including students with autism in general physical education activities. Please rate <u>how certain you are that you can do the</u> <u>tasks listed below</u> by writing the appropriate number after the question.

*Please rate your degree of confidence by recording a number from 0 to 10 using the scale given below:* 

Cai do	0 nnot o at all	1	2	3	4	5 Moderately can do	6	7	8	9	10 highly certain can do
	<u>1</u> :	am co	onfider	nt in m	y abili	ty to:				<u>Cor</u>	<u>ıfidence</u> 0–10)
<ol> <li><u>Modify equipment</u> for students with autism who are included in my general physical education classes.</li> </ol>											
2.	<u>Modify</u> my ge	<u>/ activ</u> neral	<u>vities</u> fo physic	or stud al educ	lents v cation	vith autism who classes.	o are ii	nclude	d in		
3.	<u>Create</u> include	<u>a saf</u> ed in r	<u>e envir</u> my ger	r <u>onme</u> neral p	<u>nt</u> for : hysica	students with a l education clas	utism sses.	who a	ire		
4. <u>-</u>	<ol> <li>Promote social interactions with peers for students with autism who are included in my general physical education classes</li> </ol>										
5.	<u>Manag</u> my gei	<u>ge beh</u> neral	naviors physic	of stu al educ	dents cation	with autism wh classes.	no are	includ	ed in		
6.	<u>Modify</u> in my	<u>/ instr</u> genera	uction al phys	i <u>s</u> for s sical ec	tudent ducatio	ts with autism von classes.	vho ar	e inclu	uded		

7.	Assess the motor skills of students with autism who are	
	included in my general physical education classes.	
8	Modify rules to games for students with autism who are	
0.	<u>mouny rules to games</u> for students with dutish who are	
	included in my general physical education classes.	
9. <u>(</u>	Collaborate effectively with other teachers/professionals	
	regarding students with autism who are included in my	
	general physical education classes.	
10.	Motivate students with autism who are included in my	
	general physical education classes.	

### Mastery Experiences

Please rate the <u>level of success you have experienced</u> in doing the tasks listed below <u>when including a student with autism</u> in your general physical education classes by placing a check in the appropriate box.

How successful have you	I do not	Not at all	Not verv	Some-	Moder-	Verv
heen at performing the	have any	cuccoc		what	atoly	cuccos
been at performing the	nave any	succes-	succes-	wildt	atery	succes-
following tasks for students	exper-	stul (Less	stul	succes-	succes-	stul
with autism who are	ience	than 15%	(15–39%	sful	sful (61–	(More
included in your general	doing	of the	of the	(40–60%	85% of	than 85%
physical education classes?	this	time)	time)	of the	the time)	of the
				time)		time)
11. Modifying equipment						
12. Modifying activities						
13. Creating a safe						
environment						
14. Promoting social						
interactions						
15. Managing behaviors						
16. Modifying instructions						
17. Assessing motor skills						
18. Modifying rules						
19. Collaborating effectively						
with others						
20. Motivating the student						

### Vicarious experiences:

Pease rate the **level of success of other PE teachers you have observed** at doing the tasks listed below when including a student with autism in their general physical education classes by placing a check in the appropriate box.

How successful are other	I have	Not at all	Not very	Some-	Moder-	Very
<u>PE teachers you have</u>	not seen	succes-	succes-	what	ately	succes-
observed at performing	other PE	sful	sful	succes-	succes-	sful
the following tasks for	teachers	(Less	(15–39%	sful	sful (61–	(More
students with autism who	do this	than	of the	(40–60%	85% of	than
are included in general		15% of	time)	of the	the time)	85% of
physical education		the time)		time)		the time)
classes?						
21. Modifying equipment						
22. Modifying activities						
23. Creating a safe						
environment						
24. Promoting social						
interactions						
25. Managing behaviors						
26. Modifying						
instructions						
27. Assessing motor skills						
28. Modifying rules						
29. Collaborating						
effectively with others						
30. Motivating the						
student						

#### Social Persuasion

Please rate what <u>others (e.g. teachers, parents, colleagues, supervisors,</u> <u>principals) have told you regarding your capabilities</u> to do the tasks listed below <u>when including a student with autism</u> in your general physical education classes by placing a check in the appropriate box.

What have <u>others told</u>	I have not	Not at	Not	Both	Moderately	Very
<u>you about your</u>	been told	all	very	capable	capable	capable
capabilities to perform	anything	capable	capable	and not		
the following tasks for	about my			capable		
students with autism	capabilities					
who are included in						
your general physical						
education classes?						
31. Modify equipment						
32. Modify activities						
33. Create a safe						
environment						
34. Promote social						
interactions						
35. Manage behaviors						
36. Modify instructions						
37. Assess motor skills						
38. Modify rules						
39. Collaborate						
effectively with						
others						
40. Motivate the						
student						

### **Behaviors**

Please rate **how often** you do the tasks listed below by placing a check in the appropriate box.

<u>How often</u> do you perform the following tasks <u>for students with autism</u> who are included in your general physical education classes?

	Never	Rarely	Sometimes	Often	Always
41. Modify equipment					
42. Modify activities					
43. Create a safe environment					
44. Promote social interactions					
45. Manage behaviors					
46. Modify instructions					
47. Assess motor skills					
48. Modify rules					
49. Collaborate effectively with					
others					
50. Motivate the student					

### **Physiological States**

Please rate how including a child with autism in your general physical education class **makes you feel** by placing a check in the appropriate box.

	Definitely	Moderately	Neither	Moderately	Definitely
	false	false	true nor	true	true
			false		
51. Including a student with					
autism in my general					
physical education class					
makes me feel stressed.					
52. Including a student with					
autism in my general					
physical education class					
makes me feel nervous.					

### <u>Challenges</u>

A number of situations are described below that can make it difficult for you to include students with disabilities in your general physical education classes. Please rate the **<u>extent to which each situation makes it difficult</u>** for you to meaningfully include <u>a student with autism</u> into your general physical education program.

To what extent do the following	Not at all	Not	Sometimes	Somewhat	Very
situations make it difficult for	an issue	much of	an issue,	of an issue	much
you to meaningfully include a		an issue	sometimes		an issue
student with autism into your			not an		
general physical education			issue		
program?					
53. I am not sure how to modify					
activities					
54. I do not have time to make					
modifications					
55. I do not have appropriate					
equipment					
56. I have large class sizes					
57. There are multiple classes in					
the gym					
58. The student's skill level is					
very different than peers in					
the class					
59. I have no aid or support to					
help					
60. I do not have information					
about the student					
61. I have limited training on					
autism					
62. The student has behavior					
problems					
63. The student has problems					
staying on task					

#### Now, tell us:

- 1. How old are you?
- 2. What is your gender? _____
- 3. What state do you currently teach in?
- 4. Are you certified to teach PE in your state (yes/no)____
- 5. How many years of experience teaching physical education do you have? (e.g., 1yr, 2r., etc.)_____
- 6. What grade level(s) do you currently teach? (e.g., elementary, middle, high school)_____
- 7. How many undergraduate courses have you completed in adapted physical education?
- 8. How many graduate courses have you completed in adapted physical education?
- 9. How many undergraduate or graduate courses have you completed in special education?
- 10. How many in-services have you attended that had information on autism?
- 11. Does your school district have an adapted physical education specialist (yes/no)?
- 12. If yes to #11 above, this APE person (check all that apply):
  - a. _____ teaches the student in a separate adapted physical education class setting.
  - b. ____ consults with me on how to better work with this student in my PE class.
  - c. ____ pulls student out of my class to work one on one in a different environment.
  - d. ____ comes into my PE class and works with the student on a monthly basis.
  - e. ____ comes into my PE class and works with the student on a weekly basis.
- 13. In the past 5 years, approximately how many students with autism have been included in your general physical education classes?
- 14. Do you feel you have support from the following:
- 15. How well do you think your undergraduate PE program prepared you to include students with autism in general physical education?

_____Not at all _____Fairly well _____Very well

### Thank you so much!

### Appendix 5. The Children's Attitudes Toward Integrated Physical Education-Revised (CAIPE-R)

(Student with wheelchair)

Martin E. Block University of Virginia 1995

### [The picture of a student in a wheelchair]

Jimmy [pseudonym] is the same age you are. However, he cannot walk, so he uses a wheelchair to get around. Jimmy likes playing the same games you do, but he does not do very well in the games. Even though he can push his wheelchair, he is slower than you and tires easily. He can throw a ball, but not very far. He can catch balls that are tossed straight at him, and he can hit a baseball off a tee, but he cannot shoot a basketball high enough to make a basket. Because his legs do not work, he cannot kick a ball. When listening to the sentences, think about Jimmy.

- 1. I live in Illinois
- 2. We eat lunch at 8:30 a.m.

### General Statements

- 3. It would be OK having Jimmy in my P.E. class.
- 4. Because Jimmy needs help to play sports, he would slow down the game.
- 5. If we were playing a team sport such as basketball, it would be OK having Jimmy on my team.
- 6. P.E.would be fun if Jimmy were in my P.E. class.
- 7. If Jimmy were in my P.E. class, I would talk to him and be his friend.
- 8. If Jimmy were in my P.E. class, I would like to help him practice and play the games.

### Sport-Specific Statements (referenced to sofball for this particular school)

- 9. Jimmy could hit a ball placed on a tee.
- 10. Jimmy could have someone help him run to first base.
- 11. The distance between home and first base could be shorter for Jimmy.
- 12. Someone could help Jimmy when he plays in the field.
- 13. If the ball was hit to Jimmy, the batter could only run as far as second base.

### Answer sheet

Age _____

Circle one:

Boy Girl

Circle one:

**YES**, someone in my family or a close friend of mine has a disability

Circle one:

**YES**, I had someone in one of my regular classes who had a disability

Circle one:

**YES**, I had someone In one of my P.E. Classes who had a Disability NO, I do not have any family members or friends who have a disability

**NO**, I never had someone in my regular classes who had a disability

**NO**, I never had someone in my P.E. classes who had a disability

Circle one:

Very competitive (I like to win, and I get very upset if I lose) **Kind of competitive** (I like to win, but it is OK if I lose sometimes)

Not competitive

(no matter whether they win or lose; they like the game itself)

### -- PLEASE TURN TO THE NEXT PAGE--

### NOW LISTEN TO THE MONITOR AND CIRCLE YOUR ANSWER.

1.	YES	PROBABLY YES	<b>PROBABLY NO</b>	NO
2.	YES	PROBABLY YES	PROBABLY NO	NO
3.	YES	PROBABLY YES	PROBABLY NO	NO
4.	YES	PROBABLY YES	PROBABLY NO	NO
5.	YES	PROBABLY YES	PROBABLY NO	NO
6.	YES	PROBABLY YES	PROBABLY NO	NO
7.	YES	PROBABLY YES	PROBABLY NO	NO
8.	YES	PROBABLY YES	PROBABLY NO	NO
9.	YES	PROBABLY YES	PROBABLY NO	NO
10.	YES	PROBABLY YES	PROBABLY NO	NO
11.	YES	PROBABLY YES	PROBABLY NO	NO
12.	YES	PROBABLY YES	PROBABLY NO	NO
13.	YES	PROBABLY YES	PROBABLY NO	NO

Thank you! You are finished!

**Appendix 6.** Lithuanian version of Self-Efficacy Scale for Physical Education Teacher Education Majors towards Children with Disabilities (SE-PETE-D-LT)

AIKOMASIS FIZINIS UGDYMAS OMASIS FIZINIS Kūno kultūros mokytojų savaveiksmiškumo skalė dirbant su mokiniais turinčiais negalig bendroje kūno kultūros pamokoje Martin E. Block, Ph.D. Virdžinijos universitetas, JAV Aija Klavina, Ph.D., Latvijossportoakademija, Latvija Shayke Hutzler, Ph.D., Wingate universitetas, Izraelis Konkredios situacijos saviveiksmiškumas ir kūno kultūros mokytojo skalė Puslapis1

# Kūno kultūros mokytojų savaveiksmiškumo skalė dirbtant su negalią turinčiais mokiniais bendroje kūno kultūros pamokoje

Šiuo tyrimu siekiame ištirti Jūsų savaveiksmiškuma itraukti intelekto, fizine ir regėjimo sutrikimų turinčius moksleivius į Jūsų mokyklos (gimnazijos) kūno kultūros programą. Savaveiksmiškumą mes apibrėžiame kaip Jūsu asmeninį savo kompetencijų vertinimą arba pasitikėjimą savo gebėjimais atlikti užduotį arba pasiekti tikslą (Bandura, 1986). Šiuo konkrečiu atveju mes norime, kad Jūs pati(-s) jvertintumėte savo pasitikėjimą gebėjimu dirbti su intelekto, fizine ir regėjimo negalią turinčiu moksleiviu bendroje kūno kultūros pamokoje. Kiekvienu klausimu kompetencija vertinama balais nuo 1 (nepasitikiu) iki 5 (visiškai pasitikiu). Nėra teisingų ar klaidingų atsakymų – mes tik norime sužinoti, kiek Jūs pasitikite savo gebėjimu dirbti pagal pateiktą situaciją, apibūdinančią intelekto, fizinę arba regėjimo negalia turinčius moksleivius bendroje kūno kultūros pamokoje. Tyrimo pradžioje pateikti keli klausimai demografinei informacijai surinkti. Mes neprašome Jūsų nurodyti savo vardo ir pavardės ar kitos asmenį identifikuoti leidžiančios informacijos, tad Jūsų dalyvavimas yra visiškai anonimiškas. Jūsų atsakymai Jums tiesiogiai jokių pasekmių neturės. Gautų tyrimo duomenų anonimiškumą ir konfidencialumą garantuojame. Labai prašome Jūsų kiek galima tiksliau atsakyti j anketoje pateiktus klausimus. Jei sutinkate dalyvauti tyrime, atsakymus jrašykite arba pažymėkite tam skirtuose langeliuose. Iškilus neaiškumams dėl anketos galite kreiptis į tyrimo vykdytoja Dovile Selickaite (mob. tel. +370 662 53706 ir el. paštu dovile.selickaite@gmail.com). Nuoširdžiai dėkojame už bendradarbiavimą.

# Demografinė informacija

1.	Amžius		2. Lytis								
3.	Jūsų kaip kūno kultūros mokytojo darbo stažas? (įrašykite)metai										
4.	Ar studijų ir (ar) po studijų esate išklausęs <i>Taikomosios fizinės veiklos</i> kursą st										
	(Taip / Ne)? Jei "taip", kok	ios tru	kmės	val.							
*Ta neg kur:	*Taikomosios fizinės veiklos kursas – tai kursas, kurio metu nagrinėjamos temos apie įvairias negalias turinčių asmenų įtraukimą į kūno kultūros pamokas, sportą ir kitas fizines veiklas. Šie kursai(seminarai) neapima šių asmenų kineziterapijos ir kitų terapinių veiklų.										
5.	Ar studijų ir (ar) po studijų esate išklau	sęs Spe	cialiojo ugdyn	no kursą (Taip/Ne)?							
	Jei "taip", kokios trukmės		val.								
6.	Kiek mokinių, turinčių negalią, per pasl	kutinius	s 5 metus buvo	o į traukta į Jūsų							
	bendrą kūno kultūros pamoką? (įrašyki	ite)									
	Intelekto negalia Fizinė neg	galia	Rego	os sutrikimai							
7.	Ar Jūs gaunate (turite) galimybę gauti š	śių spec	cialistų paramą	<u>1</u> ?							
		<u>Taip</u>	Ne	<u>Nežinau</u>							
	Taikomosios fizinės veiklos specialisto										
	Mokytojo asistento										
	Specialiojo pedagogo										
	Kineziterapeuto										
	Kita										
8.	Kokia Jūsų asmeninė patirtis su asmeni	imis, tu	rinčiais negalia	<u>ð</u> ;							
	Neturiu patirti	es	Draugas	Šeimos narys							
	Intelekto negalia										
	Fizine negalia										
	Regos negalia										

### 1 dalis – Intelekto negalia

Toliau apibūdintas moksleivis, turintis intelekto negalią. Po apibūdinimo yra keletas klausimų apie Jūsų kompetenciją (gebėjimą) sudaryti tam tikras sąlygas šiam moksleiviui bendroje kūno kultūros pamokoje. Klausimai pateikiami po moksleivio su negalia apibūdinimo. Atsakykite į klausimus, lyg šis moksleivis kitą savaitę dalyvautų Jūsų kūno kultūros pamokoje. Kiekviename klausime kompetencijos skalė vertinama balais nuo 1 (nieko negaliu padaryti) iki 5 (tikrai galiu kai ką padaryti).

#### *****

#### Moksleivio su intelekto negalia apibūdinimas

Nojus yra progimnazijos moksleivis su intelekto negalia, todėl mokosi lėčiau nei jo bendraklasiai. Dėl intelekto negalios jis blogai kalba, todėl kartais sunku suprasti, ką jis sako, tačiau Nojus gestais parodo, ko nori. Jam taip pat sunku suprasti žodinius nurodymus, ypač kai nurodymas apima daugiau nei vieną veiksmą. Nojui patinka tie patys žaidimai kaip ir jo bendraklasiams, tačiau žaisti pagal taisykles jam sunkiai sekasi. Jis gali bėgti, tačiau bėga lėčiau už savo bendraamžius ir greitai pavargsta. Jis gali mesti, bet nelabai toli, ir gali pagauti tiesiai jam metamą kamuolį. Jam patinka futbolas, bet jis nenuspiria kamuolio toli ir niekad neprisimena, kur reikia bėgti futbolo aikštėje. Jam patinka ir krepšinis, bet jis nesugeba varytis kamuolio jo nepamesdamas ir neturi pakankamos koordinacijos įmesti kamuolį į krepšį. Jis taip pat nesupranta krepšinio bei kitų komandinių žaidimų taisyklių ir žaisdamas neišlaiko dėmesio.

	*********										
Prašome įvertinti, <b>kiek Jūs esate įsitikinęs, kad galite atlikti toliau išvardytas</b> <b>užduotis</b> , vertinimo skalėje po kiekvieno klausimo įrašydami skaičių nuo 1 iki 5.											
1 Jokio pasitikėjimo	2 Mažas pasitikėjimas	3 Vidutinis pasitikėjimas	4 Didelis pasitikėjimas	5 Visiškas pasitikėjimas							

<u>a–c klausimai</u>: Per kūno kultūros pamoką Jūs tikrinate 30 šeštokų, tarp kurių yra Nojus, fizinį pajėgumą.

Pasitikėjimas (1–5)

- a. Kiek pasitikite savo gebėjimu **nenukrypti nuo užduoties** per fizinio pajėgumo patikrinimą?
- b. Kiek pasitikite savo gebėjimu pritaikyti užduotis Nojui?
- c. Kiek pasitikite savo gebėjimu **paaiškinti bendraklasiams, kaip padėti Nojui** per fizinio pajėgumo patikrinimą?

**d–h klausimai:** Per kūno kultūros pamoką 30 šeštokų, tarp kurių yra Nojus, mokote žaisti komandinį žaidimą, pvz., tinklinį, krepšinį arba futbolą. Dabar pirmoji modulio savaitė ir Jūs mokote žaidimo technikos pagrindų, pvz., smūgiavimo, perdavimo, padavimo (tinklinyje).

### Pasitikėjimas (1–5)

- d. Kiek, mokydami žaidimo technikos, pasitikite savo gebėjimu pritaikyti užduotis
   Nojui, kad jis suprastų, ką reikia daryti?
- e. Kiek, mokydami žaidimo technikos, pasitikite savo gebėjimu padėti Nojui nenukrypti nuo užduoties?
- f. Kiek, mokydami žaidimo technikos, pasitikite savo gebėjimu pritaikyti įrangą Nojui?
- g. Kiek, mokydami žaidimo technikos, pasitikite savo gebėjimu **modifikuoti** Nojaus jo turimus įgūdžius, kad jam padėtumėte?
- h. Kiek, mokydami žaidimo technikos, pasitikite savo gebėjimu **paaiškinti** bendraklasiams, kaip padėti Nojui?

<u>i–k klausimai</u>: Per kūno kultūros pamoką 30 šeštokų, tarp kurių yra Nojus, mokote žaisti komandinį žaidimą, pvz., tinklinį, krepšinį arba futbolą. Dabar paskutinė modulio savaitė ir moksleiviai žaidžią tikrą žaidimą.

- i. Kiek pasitikite savo gebėjimu pritaikyti žaidimo taisykles Nojui?
- j. Kiek pasitikite savo gebėjimu padėti Nojui nenukrypti nuo užduoties žaidimo metu?
- k. Kiek pasitikite savo gebėjimu **paaiškinti bendraklasiams kaip padėti Nojui** žaidimo metu?

### 2 dalis – Fizinė negalia

Toliau apibūdintas moksleivis su fizine negalia. Po apibūdinimo yra keletas klausimų apie Jūsų kompetenciją (gebėjimą) sudaryti tam tikras sąlygas šiam moksleiviui kūno kultūros pamokoje. Kaip ir ankstesnėje dalyje, atsakykite į klausimus taip, lyg šis moksleivis kitą savaitę dalyvautų Jūsų kūno kultūros pamokoje. Kiekviename klausime kompetencijos skalė vertinama balais nuo 1 (nieko negaliu padaryti) iki 5 (tikrai galiu kai ką padaryti).

#### Moksleivio su fizine negalia apibūdinimas

Audrius – gimnazijos moksleivis su trauminiu nugaros smegenų pažeidimu. Jis negali vaikščioti ir juda vežimėliu. Audriui patinka tie patys žaidimai, kaip ir jo bendraklasiams, tačiau žaisti jam sekasi sunkiai. Stumdamas savo vežimėlį jis juda lėčiau nei kiti ir pavargsta po 1–2 minučių. Tinklinyje jis gali perduoti ir paduoti kamuolį, tačiau ne taip toli, kad permestų per tinklą. Jo viršutinė kūno dalis nėra taip stipriai išsivysčiusi ir jam neužtenka jėgos įmesti kamuolį į standartiniame aukštyje kabantį krepšį. Nevaldydamas kojų jis negali spirti futbolo kamuolio, tačiau gali savo vežimėliu varyti jį į priekį.

Prašome įvertinti, **kiek Jūs esate įsitikinęs, kad galite atlikti toliau išvardytas užduotis**, vertinimo skalėje po kiekvieno klausimo įrašydami skaičių nuo 1 iki 5.

1	2	3	4	5
Jokio nacitikėjimo	Mažas	Vidutinis	Didelis	Visiškas
pasitikejimo	pasitikėjimas	pasitikėjimas	pasitikėjimas	pasitikejimas

<u>a–d klausimai</u>: Per kūno kultūros pamoką Jūs tikrinate 30 šeštokų, tarp kurių yra Audrius, fizinį pajėgumą.

- a. Kiek pasitikite savo gebėjimu nustatyti Audriui individualius tikslus per fizinio pajėgumo patikrinimą?
- b. Kiek pasitikite savo gebėjimu pritaikyti užduotis Audriui?
- c. Kiek pasitikite savo gebėjimu **paaiškinti bendraklasiams, kaip padėti** Audriui per fizinio pajėgumo testavimą?
- d. Kiek pasitikite savo gebėjimu sukurti saugią aplinką Audriui testuojant fizinį pajėgumą?

<u>e-h klausimai</u>: Per kūno kultūros pamoką 30 šeštokų, tarp kurių yra Audrius, mokote žaisti komandinį žaidimą, pvz., tinklinį, krepšinį arba futbolą. Dabar pirmoji modulio savaitė ir Jūs mokote pagrindinių žaidimo technikos pagrindų, pvz.: smūgiavimo, perdavimo, padavimo (tinklinyje).

### Pasitikėjimas (1–5)

- e. Kiek mokydami žaidimo technikos pasitikite savo gebėjimu modifikuoti Audriaus turimus sportinius įgūdžius, jei jis negali atlikti veiksmų taip gerai, kaip jo bendraamžiai?
- f. Kiek mokydami žaidimo technikos pasitikite savo gebėjimu sukurti saugią aplinką Audriui?
- g. Kiek mokydami žaidimo technikos pasitikite savo gebėjimu **pritaikyti įrangą** Audriui?
- h. Kiek mokydami žaidimo technikos pasitikite savo gebėjimu paaiškinti bendraklasiams, kaip padėti Audriui?

<u>i–l klausimai</u>: Per kūno kultūros pamoką 30 šeštokų, tarp kurių yra Audrius, mokote žaisti komandinį žaidimą, pvz., tinklinį, krepšinį arba futbolą. Dabar paskutinė modulio savaitė ir moksleiviai žaidžią tikrą žaidimą.

- i. Kiek pasitikite savo gebėjimu pritaikyti žaidimo taisykles Audriui?
- j. Kiek pasitikite savo gebėjimu žaidimo metu pritaikyti įrangą Audriui?
- k. Kiek pasitikite savo gebėjimu žaidimo metu sukurti saugią aplinką Audriui?
- Kiek pasitikite savo gebėjimu paaiškinti bendraklasiams, kaip padėti Audriui žaidimo metu?

### 3 dalis – Regėjimo sutrikimas

Toliau apibūdinta moksleivė su regėjimo sutrikimu. Po apibūdinimo yra keletas klausimų apie Jūsų kompetenciją (gebėjimą) sudaryti tam tikras sąlygas šiai moksleivei kūno kultūros pamokoje. Kaip ir ankstesnėse dalyse, atsakykite į klausimus taip, lyg ši moksleivė kitą savaitę dalyvautų Jūsų kūno kultūros pamokoje. Kiekviename klausime kompetencijos skalė vertinama balais nuo 1 (nieko negaliu padaryti) iki 5 (tikrai galiu kai ką padaryti).

### Moksleivės su regėjimo sutrikimu apibūdinimas

Sofija yra gimnazijos moksleivė. Ji turi sunkų regėjimo sutrikimą ir mato tik labai arti esančius žmones bei daiktus. Jai patinka sportuoti ir jos fizinis pajėgumas panašus į bendraamžių. Jai reikia fizinės pagalbos judėti sporto salėje. Pavyzdžiui, bėgdama ji laikosi už bendraklasio parankės ir klausosi bendraklasio žodinių užuominų (įspėjimų). Dėl blogo regėjimo ji nemato rodomų judesių, todėl jai reikia žodinių instrukcijų ir liečiamųjų judesių, kad suprastų, kaip atlikti judesį. Žaidžiant komandinius žaidimus (pvz., tinklinį, krepšinį, futbolą), saugumo sumetimais reikia, kad šalia jos kas nors būtų ir pasakytų, kurioje aikštės vietoje jie yra, taip pat reikia kamuolio su garsu, kad ji žinotų, kur žaidimo metu yra kamuolys. Ji neturi kamuolio gaudymo įgūdžių, tačiau gali mesti arba spirti kamuolį į taikinį su garsiniu signalu.

Prašome įvertinti, **kiek Jūs esate įsitikinęs, kad galite atlikti toliau išvardytas užduotis**, vertinimo skalėje po kiekvieno klausimo įrašydami skaičių nuo 1 iki 5.

1	2	3	4	5
Jokio	Mažas	Vidutinis	Didelis	Visiškas
pasitikėjimo	pasitikėjimas	pasitikėjimas	pasitikėjimas	pasitikėjimas

<u>a–d klausimai</u>: Per kūno kultūros pamoką Jūs tikrinate 30 šeštokų, tarp kurių yra Sofija, fizinį pajėgumą.

- a. Kiek pasitikite savo gebėjimu sukurti Sofijai saugią aplinką per fizinio pajėgumo testavimą?
- b. Kiek pasitikite savo gebėjimu **paaiškinti bendraklasiams, kaip padėti Sofijai** per fizinio pajėgumo testavimą?

c. Kiek pasitikite savo gebėjimu **pakeisti fizinio pajėgumo testavimo reikalavimus Sofijai** per fizinio pajėgumo patikrinimą?

<u>d–g klausimai</u>: Per kūno kultūros pamoką 30 šeštokų, tarp kurių yra Sofija, mokote žaisti komandinį žaidimą, pvz., tinklinį, krepšinį arba futbolą. Dabar pirmoji modulio savaitė ir Jūs mokote pagrindinių žaidimo technikų, pvz., smūgiavimo, perdavimo, padavimo (tinklinyje).

#### Pasitikėjimas (1–5)

- d. Kiek, mokydami žaidimo technikos, pasitikite savo gebėjimu pritaikyti užduotis Sofijai?
- e. Kiek, mokydami žaidimo technikos, pasitikite savo gebėjimu **paaiškinti** bendraklasiams, kaip padėti Sofijai?
- f. Kiek, mokydami žaidimo technikos, pasitikite savo gebėjimu pritaikyti įrangą Sofijai?
- g. Kiek, mokydami žaidimo technikos, pasitikite savo gebėjimu sukurti saugią aplinką Sofijai?

<u>h–j klausimai</u>: Per kūno kultūros pamoką 30 šeštokų, tarp kurių yra Sofija, mokote žaisti komandinį žaidimą, pvz., tinklinį, krepšinį arba futbolą. Dabar paskutinė modulio savaitė ir Jūs mokote pagrindinių žaidimo technikų, pvz., smūgiavimo, perdavimo, padavimo (tinklinyje).

- h. Kiek pasitikite savo gebėjimu žaidimo metu sukurti saugią aplinką Sofijai?
- Kiek pasitikite savo gebėjimu paaiškinti bendraklasiams, kaip padėti Sofijai žaidimo metu?
- j. Kiek pasitikite savo gebėjimu pakeisti žaidimo taisykles pagal Sofijos įgūdžius?

Appendix 7. Lithuanian version of Physical Educators' Self-Efficacy Toward Including Students with Disabilities-Autism (PESEISD-A-LT)



## Kūno kultūros mokytojų savaveiksmiškumas įtraukti mokinius su autizmo sutrikimais į bendrą kūno kultūros pamoką

**Tikslas:** Šiuo tyrimu siekiame ištirti jūsų pasitikėjimą savimi vertinant gebėjimą saugiai, sėkmingai ir prasmingai įtraukti mokinius, turinčius autizmo sutrikimų, į jūsų mokyklos (gimnazijos) kūno kultūros programą.

Žemiau pateikiame apibūdinimą mokinio, turinčio autizmo sutrikimą. Po apibūdinimo pateikti klausimai apie tai, kaip Jūs jaučiatės atlikdami tam tikras užduotis, siekiant jas pritaikyti šiam mokiniui. Atsakykite į klausimus taip, lyg šis mokinys dalyvautų Jūsų kūno kultūros pamokoje kitą savaitę. Čia nėra teisingų ir klaidingų atsakymų, kiekvienas Jūsų į klausimus atsakys skirtingai. Mes tiesiog norime sužinoti, kaip Jūs vertinate savo pasitikėjimą gebėjimu saugiai, sėkmingai ir prasmingai įtraukti mokinius, turinčius autizmo sutrikimų, į kitą savaitę Jūsų vedamą bendrą kūno kultūros pamoką. Toliau anketoje yra klausimai apie Jūsų patirtį įtraukti mokinius, turinčius autizmo sutrikimų, į bendras kūno kultūros pamokas. Tyrimo pabaigoje yra keli klausimai demografinei informacijai surinkti.

### Autizmo apibūdinimas

*Mokinys su autizmo sutrikimu yra tas, kuris turi:

a) reikšmingų socialinio bendravimo su bendraamžiais ir mokytojais sunkumų,

b) reikšmingų sunkumų komunikuojant, tiek suprantant, kas yra sakoma, tiek kalbant,

c) specifinį, pasikartojantį elgesio modelį, kuris trukdo mokymuisi ir dalyvavimui.

Kūno kultūros pamokoje dauguma mokinių su autizmo sutrikimu gali turėti sunkumų bendraujant su bendraamžiais, suprantant kryptis, sekant pokyčius pamokos eigoje, naudojant įrangą ir priemones pagal paskirtį, toleruojant esamą triukšmą sporto salėje. Taip pat mokiniai su autizmo sutrikimu gali elgtis netinkamai: plaikstytis, pliaukšėti rankomis, linguoti, be tikslo blaškytis po salę.

*Remtasi DSM-IV-TR autizmo aprašymu (2000).

# Kūno kultūros mokytojų savaveiksmiškumas įtraukti mokinius su autizmo sutrikimais

Šis tyrimas skirtas geriau suprasti, kokios kylančios problemos labiausiai trukdo kūno kultūros mokytojams įtraukti mokinius su autizmo sutrikimais (AS) į bendras veiklas per kūno kultūros pamokas.

Prašome įvertinti, **kiek Jūs esate įsitikinęs, kad galite atlikti išvardytas užduotis,** po kiekvieno klausimo įrašydami atitinkamą vertinimą.

Prašome įvertinti pasitikėjimą savimi naudodami šią vertinimo skalę, įrašydami skaičius nuo 0 iki 10:

0	1	2	3	4	5	6	7	8	9	10
Visiškai					Vidutiniškai					Visiškai
negaliu					atlikti					kad galiu
										tai atlikti

Aš pasitikiu savo gebėjimu:	Pasitikėjimas (0–10)
<ol> <li><u>Pritaikyti priemones</u> mokiniams su AS, kurie dalyvauja mano vedamose bendrose kūno kultūros pamokose.</li> </ol>	
<ol> <li><u>Pritaikyti veiklas</u> mokiniams su AS, kurie dalyvauja mano vedamose bendrose kūno kultūros pamokose</li> </ol>	
<ol> <li><u>Sukurti saugią aplinką</u> mokiniams su AS, kurie dalyvauja mano vedamose bendrose kūno kultūros pamokose.</li> </ol>	
<ol> <li><u>Skatinti bendradarbiavimą su bendraamžiais</u> mokiniams su AS, kurie dalyvauja mano vedamose bendrose kūno kultūros pamokose.</li> </ol>	
<ol> <li><u>Valdyti elgesi</u> mokinių su AS, kurie dalyvauja mano vedamose bendrose kūno kultūros pamokose.</li> </ol>	
<ol> <li><u>Pritaikyti nurodymus atliekant užduotis</u> mokiniams su AS, kurie dalyvauja mano vedamose bendrose kūno kultūros pamokose.</li> </ol>	
<ol> <li><u>Jvertinti judėjimo įgūdžius</u>mokinių su AS, kurie dalyvauja mano vedamose bendrose kūno kultūros pamokose.</li> </ol>	
<ol> <li>Modifikuoti žaidimų taisykles mokiniams su AS, kurie dalyvauja mano vedamose bendrose kūno kultūros pamokose.</li> </ol>	
<ol> <li><u>Efektyviai bendradarbiauti su kitais mokytojais (specialistais)</u> dėl mokinių su AS, kurie dalyvauja bendrose kūno kultūros pamokose.</li> </ol>	
10. <u>Motyvuoti</u> mokinius su AS, kurie dalyvauja mano vedamose bendrose kūno kultūros pamokose.	

### Patirties meistriškumas

Prašome įvertinti, kaip Jums patiems, remiantis savo asmenine patirtimi, pavyko sėkmingai atlikti išvardytas užduotis, įtraukiant mokinius su AS į bendras kūno kultūros pamokas. Pažymėkite Jums tinkamą variantą, padėdami varnelę atitinkamame langelyje.

Kaip sėkmingai <u>Jūs</u> atlikote šias užduotis mokiniams su AS, kurie dalyvauja Jūsų vedamose bendrose kūno kultūros pamokose?	Aš neturiu patirties tai atlikti	Visiškai nesėk- mingai (mažiau nei 15 % viso	Nelabai sėkmin- gai (15– 39 % viso laiko)	Kažkas pavyko sėkmin- gai (40– 60 % viso	Viduti- niškai sėkmin- gai (61–85 % viso laiko)	Labai sėkmin- gai (daugiau nei 85 % viso laiko)
		laiko)	iunco)	laiko)	iunco)	iunco)
11. Pritaikant priemones		· · ·		· · ·		
12. Pritaikant veiklas						
13. Kuriant saugią aplinką						
14. Skatinant						
bendradarbiavimą						
15. Valdant elgesį						
16. Pritaikant instrukcijas						
17. Vertinant judėjimo						
įgudžius						
18. Modifikuojant taisykles						
19. Efektyviai						
bendradarbiaujant						
su kitais						
20. Motyvuojant mokinius						

### Netiesioginė patirtis:

Prašome įvertinti, kaip kitiems kūno kultūros mokytojams, kuriuos Jums teko stebėti, pavyko sėkmingai atlikti išvardytas užduotis, įtraukiant mokinius su AS į bendras kūno kultūros pamokas. Pažymėkite Jums tinkamą variantą, padėdami varnelę atitinkamame langelyje.

Kaip sėkmingai <u>kiti kūno</u>	Neteko	Visiškai	Nelabai	Kažkas	Viduti-	Labai
<u>kultūros mokytojai</u> atliko	matyti nė	nesėk-	sėkmin-	pavyko	niškai	sėkmin-
šias užduotis mokiniams	vieno kito	mingai	gai	sėkmin-	sėkmin-	gai
su AS, kurie dalyvavo	mokytojo	(mažiau	(15–	gai	gai (61–	(daugiau
bendrose kūno kultūros	tai	nei 15 %	39 %	(40–60 %	85 %	nei 85 %
pamokose?	atliekant	viso	viso	viso	viso	viso
		laiko)	laiko)	laiko)	laiko)	laiko)
21. Pritaikant priemones						
22. Pritaikant veiklas						
23. Kuriant saugią						
aplinką						
24. Skatinant						
bendradarbiavimą						
25. Valdant elgesį						
26. Pritaikant instrukcijas						
27. Vertinant judėjimo						
įgūdžius						
28. Modifikuojant						
taisykles						
29. Efektyviai						
bendradarbiaujant						
su kitais						
30. Motyvuojant						
mokinius						

### Visuomenės nuomonė

Prašome įvertinti, kaip **kiti (pvz., mokytojai, tėvai, kolegos, vadovai, konsultantai) atsiliepia apie Jūsų gebėjimus** atlikti išvardytas užduotis<u>, **jtraukiant mokinius su**</u> <u>AS, j</u> bendras kūno kultūros pamokas. Pažymėkite Jums tinkamą variantą, padėdami varnelę atitinkamame langelyje.

Ką kiti Jums sakė apie Jūsų	Niekada	Visiškai	Nelabai	Sakė,	Vidutiniškai	Labai
gebėjimus atlikti šias	niekas	negebu	sugebu	tiek	sugebu	sugebu
užduotis mokiniams su AS,	nesakė			sugebu,		
kurie dalyvauja Jūsų	apie			tiek		
vedamose bendrose kūno	mano			negebu		
kultūros pamokose?	gebėjimus					
31. Pritaikyti priemones						
32. Pritaikyti veiklas						
33. Kurti saugią aplinką						
34. Skatinti						
bendradarbiavimą						
35. Valdyti elgesį						
36. Pritaikyti instrukcijas						
37. Vertinti judėjimo						
įgūdžius						
38. Modifikuoti taisykles						
39. Efektyviai						
bendradarbiauti						
su kitais						
40. Motyvuoti mokinius						

### Elgesys

Prašome įvertinti, kaip dažnai Jūs atliekate išvardytas užduotis, padėdami varnelę langelyje.

<u>Kaip dažnai</u> Jūs atliekate išvardintas užduotis mokiniams su AS, kurie yra įtraukti į Jūsų vedamas kūno kultūros pamokas?

	Niekada	Retai	Kartais	Dažnai	Nuolat
41. Pritaikote priemones					
42. Pritaikote veiklas					
43. Kuriate saugią aplinką					
44. Skatinate bendradarbiavimą					
45. Valdote elgesį					
46. Pritaikote instrukcijas					
47. Vertinate judėjimo įgūdžius					
48. Modifikuojate taisykles					
49. Efektyviai bendradarbiaujate su kitais					
50. Motyvuojate mokinius					

### Psichologinė būsena

Prašome įvertinti, kaip jaučiatės, kai Jums reikia įtraukti mokinį su AS į bendrą kūno kultūros pamoką? Pažymėkite Jums tinkamą variantą, padėdami varnelę atitinkamame langelyje.

	Visiškai nesutinku	Labiau nesutinku	Nei sutinku,	Labiau sutinku	Visiškai sutinku
51. Jaučiu stresą, kai man reikia įtraukti mokinį su AS į bendrą kūno kultūros pamoka			nerne		
52. Labai nervinuosi, kai man reikia įtraukti mokinį su AS į bendrą kūno kultūros pamoką					

### Iššūkiai

Žemiau aprašytos situacijos, kurios labiausiai gali Jus apsunkinti siekiant sėkmingai įtraukti mokinius su negalia į bendras kūno kultūros pamokas. Prašome įvertinti, kaip kiekviena aprašyta situacija Jus asmeniškai apsunkina vykdant bendrą kūno kultūros pamokos programą, į ją prasmingai įtraukiant mokinius su AS?

<u>Kaip š</u> ios situacijos Jums apsunkina	Tai	Ne	Kai kada	Dažnai	Tai
prasmingą mokinių su AS įtraukimą į	visai	esminė	tai sukelia	tai gali	tikrai
bendrą kūno kultūros ugdymo	ne	prob-	problemų,	būti	esminė
programą?	prob-	lema	kai kada	prob-	prob-
	lema		ne	lema	lema
53. Aš nežinau, kaip pritaikyti veiklas					
54. Aš neturiu laiko atlikti pritaikymus					
55. Aš neturiu reikiamų priemonių					
56. Klasėje per daug mokinių					
57. Salėje per pamoką vienu metu yra					
kelios klasės					
58. Mokinių gebėjimai ir įgūdžiai labai					
skiriasi nuo kitų klasės bendraamžių					
59. Aš negaunu reikiamų priemonių ir					
paramos jiems padėti					
60. Aš neturiu informacijos apie mokinį					
61. Aš neturiu pakankamai žinių apie					
autizmą					
62. Moksleiviai turi elgesio problemų					
63. Moksleiviai negeba iki galo atlikti					
užduotį					

### Demografinė informacija

1. Amžius 2.	Lytis
--------------	-------

- Jūsų kaip kūno kultūros mokytojo darbo stažas? (įrašykite) metai
- 4. Ar studijų ir (ar) po studijų esate išklausęs *Taikomosios fizinės veiklos* kursą^{*} (Taip/ Ne)? ______ Jei "taip", kokios trukmės ______ val.

*Taikomosios fizinės veiklos kursas – tai kursas, kurio metu nagrinėjamos temos apie įvairias negalias turinčių asmenų įtraukimą į kūno kultūros pamokas, sportą ir kitas fizines veiklas. Šie kursai (seminarai) neapima šių asmenų kineziterapijos ir kitų terapinių veiklų.

- 5. Ar studijų ir (ar) po studijų esate išklausęs *Specialiojo ugdymo* kursą (Taip/Ne)? ______ Jei "taip", kokios trukmės ______ val.
- 6. Kiek mokinių, turinčių autizmo sutrikimų, per paskutinius 5 metus buvo įtraukta į Jūsų bendrą kūno kultūros pamoką? (įrašykite) _____
- 7. Ar Jūs gaunate (turite galimybę gauti) šių specialistų paramą:

	<u>Taip</u>	<u>Ne</u>	<u>Nežinau</u>
Taikomosios fizinės veiklos specialisto			
Mokytojo asistento			
Specialiojo pedagogo			
Kineziterapeuto			
Kita			

8. Kokia Jūsų asmeninė patirtis su asmenimis, turinčiais autizmo sutrikimų:

Nuturiu patirties	Draugas	Šeimos narys
Nuturiu patirties	Draugas	Šeimos narys

Appendix 8. Lithuanian version of The Children's Attitudes Towards Integrated Physical Education-Revised (CAIPE - LT)

> (CAIPE – R – Vaikų nuostatos dėl integruotos kūno kultūros pamokos – peržiūrėta versija) Martin E. Block., Virdžinijos universitetas

### Apklausos instrukcija tyrėjui

Pažymėkite žodį berniukas arba mergaitė (palaukite).

Įrašykite savo amžių (palaukite).

Įrašykite, kurioje jūs klasėje (palaukite).

Pažymėkite taip arba ne, jei jūsų šeimos ar artimų žmonių rate (pvz., brolis, pusbrolis, kiemo draugas) naudoja neįgaliojo vežimėlį, negirdi, nemato arba turi intelekto negalią (palaukite).

Pažymėkite, ar jūsų klasės **bendrose pamokose** yra arba nėra buvę vaikų su negalia, t. y. tokių, kuriems reikia dažnesnės pagalbos nei jums, negirdi, nemato, vaikšto su vaikštyne arba juda neįgaliojo vežimėlyje (palaukite).

Pažymėkite atsakymą, ar jūsų klasės **kūno kultūros pamokoje** kada nors buvo vaikų su negalia.

Pabaigoje pažymėkite atsakymą, kokiu save laikote:

Labai siekiantis pergalės (visada norite laimėti, kremtatės dėl pralaimėjimo);

<u>Šiek tiek siekiantis pergalės</u> (norite laimėti ir stengiatės gerai žaisti, bet nesikremtate dėl pralaimėjimo);

Nesiekiantis pergalės (svarbiausia – žaidimas, o ne pergalė).

### Demografiniai klausimai

Jūsų amžius:	Klasė:				
Pažymėkite vieną: <u>žymėjimo pavyzdys:</u> 🗙					
D BERNIUKAS					
Pažymėkite vieną:					
<ul> <li>TAIP, jei mano</li> <li>šeimos narys arba</li> <li>draugas turi negalią</li> </ul>	D NE, mano šeimoje tarp draugų nėra žmonių su negalia	e ir			
Pažymėkite vieną:					
<ul> <li>TAIP, jei jūsų klasės pamokose buvo vaikų su negalia</li> </ul>	D NE, jei jūsų klasės pamokose nebuvo vaikų su negalia				
Pažymėkite vieną:					
TAIP, jei jūsų kūno kultūros pamokose buvo vaikų su negalia	□ <b>NE</b> , jei jūsų kūno kultūros pamokose nebuvo vaikų su negalia				
Pažymėkite vieną:					
□ LABAI SIEKIANTIS PERGALĖS	□ ŠIEK TIEK SIEKIANTIS PERGALĖS	NESIEKIANTIS PERGALĖS			
(aš visada noriu laimėti, labai kremtuosi dėl pralaimėjimo)	(aš noriu laimėti, bet labai nesikremtu dėl pralaimėjimo)	(man nesvarbu, laimėsiu, ar pralaimėsiu, man patinka pats žaidimas)			
VERSKITE KITĄ LAPĄ →					

### Apklausos instrukcija tyrėjui

Dabar verskite kitą atsakymų lapą. Aš užduosiu jums klausimus, o jūs atsakysite, ką apie tai manote. Tai klausimai apie berniuką (mergaitę) vardu ______, kuris/-i gali ateiti į jūsų kūno kultūros pamoką. Atsakymų lape matote sunumeruotas eilutes su atsakymais <u>taip</u>, <u>tikriausiai taip</u>, <u>tikriausiai ne</u> ir <u>ne</u>. Kiekvienai atsakymų eilutei aš garsiai perskaitysiu sakinį. Tie, kurie sutiksite su šiuo sakiniu, atsakymų eilutėje apibraukite žodį "taip". Tie, kurie nesutiksite su šiuo sakiniu, atsakymų eilutėje apibraukite žodį "ne". Jei iš dalies sutinkate su perskaityto sakinio teiginiu, bet nesate tikri, atsakymų eilutėje apibraukite žodžius "<u>tikriausiai taip"</u>. Jei su perskaitytu teiginiu nesutinkate, bet nesate dėl to tikri, atsakymų eilutėje apibraukite žodžius "<u>tikriausiai taip"</u>.

Į sakinius (teiginius), kuriuos jums perskaitysiu, nėra teisingų ar neteisingų atsakymų. Viskas priklauso nuo to, ką jūs manote apie tą teiginį. Pateiksiu pavyzdį: "Aš mėgstu žaisti krepšinį." Jei jums tikrai labai patinka krepšinis, tuomet atsakymo vietoje apie šį teiginį apibrauksite "Taip". Jei jums patinka futbolas, tuomet atsakymo eilutėje apibrauksite "Ne". Jei jums patinka krepšinis, bet taip pat patinka ir kiti žaidimai, atsakyme apibrauksite "Tikriausiai taip". Jei manote, kad krepšinis nėra jūsų mėgiama sporto šaka, nes jums labiau patinka futbolas, tačiau krepšinis taip pat visai nieko, tuomet apibraukite "Tikriausiai ne".

Atsakant į tokius klausimus nebūna teisingų ir neteisingų atsakymų. Nepamirškite, kad atsakymas į kiekvieną klausimą priklauso tik nuo jūsų ir jūsų atsakymai skirsis nuo kitų vaikų atsakymų. Kai įvertinsite visus išgirstus teiginius, atsakymų lape dalis atsakymų bus "taip", dalis "tikriausiai taip", dalis "tikriausiai ne" ir dalis "ne". Gali būti ir taip, kad visi jūsų atsakymai bus vienodi.

Ar turite klausimų (palaukite klausimų)?

Tuomet pradėkime. Iš pradžių noriu jums šiek tiek papasakoti apie ....

### 1. Situacija

[Slapyvardis] yra jūsų bendraamžis, tačiau jis mokosi lėčiau nei jūs. Dėl negalios jis taip pat blogai kalba, todėl kartais sunku suprasti, ką jis sako, tačiau [Slapyvardis] gestų pagalba padeda suprasti, ko nori. Jam taip pat sunku suprasti žodinius nurodymus, ypač kai nurodymas apima daugiau nei vieną veiksmą. [Slapyvardis] patinka tie patys žaidimai kaip ir jums, tačiau žaisti pagal žaidimo taisykles jam sunkiai sekasi. Jis gali bėgti, tačiau lėčiau ir greitai pavargsta. Jis gali mesti, bet nelabai toli, gali pagauti tiesiai jam metamą kamuolį. Jam patinka futbolas, bet jis nenuspiria kamuolio toli ir niekada neprisimena, kur reikia bėgti futbolo aikštėje. Jam taip pat patinka krepšinis, bet jis nesugeba varytis kamuolio jo nepamesdamas ir neturi pakankamos koordinacijos įmesti kamuolį į krepšį. Jis nesupranta krepšinio ir kitų komandinių žaidimų taisyklių, žaisdamas neišlaiko dėmesio.

Dabar imkite atsakymų lapą, žiūrėkite į 1 eilutę ir klausykite mano skaitomo sakinio. Pasakykite sakinio numerį ir iš karto perskaitykite sakinį. Palaukite, kol vaikai apibrauks atsakymus ir tik tuomet pereikite prie kito sakinio. Kas kelis sakinius patikrinkite, ar visose eilutėse vaikai apibrėžia atsakymą. Pakartokite nurodymus skliausteliuose prieš sakinius. Perskaitę sakinį padarykite pauzę. Prieš skaitydami kitą sakinį, perskaitykite nurodymą.

(Pirmiausia atsakysime į du paruošiamuosius teiginius, susijusius su jumis. Apibraukite "taip", jei sutinkate su mano sakiniu, "tikriausiai taip", jei sutinkate, bet nesate tikri, "tikriausiai ne", jei nesutinkate, bet nesate tikri, ir "ne", jei nesutinkate).

1. Aš mėgstu žaisti krepšinį.

2. Man patinka žaisti kvadratą.

(Dabar galvokite apie [Slapyvardis] ir apibraukite "taip", jei sutinkate su mano sakiniu, "tikriausiai taip", jei sutinkate, bet nesate tikri, "tikriausiai ne", jei nesutinkate, bet nesate tikri, ir "ne", jei nesutinkate).

3. [Slapyvardis] galėtų dalyvauti mūsų kūno kultūros pamokoje.

4. Dėl [Slapyvardis] žaisčiau lėčiau, nes jis negali taip greitai žaisti.

5. Jei žaistume komandinį žaidimą, pvz., futbolą aš sutikčiau, kad [Slapyvardis] žaistų mano komandoje.

6. Jei [Slapyvardis] ateitų į mūsų kūno kultūros pamoką, būtų smagu.

7. Jei [Slapyvardis] lankytų mūsų kūno kultūros pamokas, aš su juo kalbėčiau ir draugaučiau.

8. Jei [Slapyvardis] lankytų mūsų kūno kultūros pamokas, aš padėčiau jam treniruotis ir mokytis žaisti.

9–13 teiginiai susiję su **futbolo** taisyklių pakeitimais. Primenu, kad apibraukiate "taip" jei sutinkate, "tikriausiai taip", jei sutinkate, bet nesate tikri, "tikriausiai ne", jei nesutinkate, bet nesate tikri, ir "ne", jei nesutinkate.

9. Žaidžiant futbolą noriai atlikčiau kamuolio perdavimą [Slapyvardis].

10. Kas nors nuolat trumpais žodiniais raginimais padėtų [Slapyvardis] nubėgti į reikiamą aikštės vietą.

11. Reiktų būti arčiau [Slapyvardis], kad jis galėtų perduoti kamuolio iki jūsų.

12. Jei kamuolys perduodamas [Slapyvardis], palaukti kol jis jį priims.

13. Padėčiau sudaryti sąlygas [Slapyvardis] spirti kamuolį į vartus.
## 1 situacija: Atsakymų lapas

#### KLAUSYKITE SKAITOMŲ SAKINIŲ IR APIBRAUKITE ATSAKYMĄ

1.	TAIP	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
2.	TAIP	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
3.	TAIP	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
4.	TAIP	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
5.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
6.	TAIP	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
7.	TAIP	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
8.	TAIP	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
9.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
10.	TAIP	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
11.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
12.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
13.	TAIP	<b>TIKRIAUSIAI TAIP</b>	TIKRIAUSIAI NE	NE

# VERSKITE KITĄ LAPĄ $\rightarrow$

#### Apklausos instrukcija tyrėjui

#### 2 situacija

[Sapyvardis] yra jūsų bendraamžis, tačiau negali vaikščioti ir juda neįgaliojo vežimėliu. [Slapyvardis] patinka tokie patys žaidimai kaip ir jums, tačiau jam sunkiai sekasi žaisti. Vežimėliu jis juda lėčiau nei jūs ir greitai pavargsta. Jis moka mesti kamuolį, tačiau numeta netoli. Jis gali pagauti jam tiesiai metamą kamuoliuką, tačiau negali mesti krepšinio kamuolio taip aukštai, kad šis pasiektų krepšį. Žaidžiant kvadratą jis gali perduoti kamuolį už galinės linijos esantiems komandos draugams, tačiau ne taip aukštai. [Slapyvardis] nevaldo kojų, todėl negali spirti kamuolio, tačiau gali savo vežimėliu varyti jį į priekį. Kai klausysitės mano skaitomų sakinių, galvokite apie [Slapyvardis].

(Dabar galvokite apie Slapyvardis ir prisiminkite, apibraukiate "taip", jei sutinkate su sakiniu, "tikriausiai taip", jei sutinkate, bet nesate tikri, "tikriausiai ne", jei nesutinkate, bet nesate tikri, ir "ne", jei nesutinkate).

- 1. [Slapyvardis] galėtų dalyvauti mūsų kūno kultūros pamokoje.
- 2. Dėl [Slapyvardis] žaisčiau lėčiau, nes jis negali žaisti greitai.
- 3. Jei žaistume komandinį žaidimą, pvz., krepšinį, aš sutikčiau, kad [Slapyvardis] žaistų mano komandoje.
- 4. Jei [Slapyvardis] ateitų į mūsų kūno kultūros pamoką, būtų smagu.
- 5. Jei [Slapyvardis] lankytų mūsų kūno kultūros pamokas, aš su juo kalbėčiau ir draugaučiau.
- 6. Jei [Slapyvardis] lankytų mūsų kūno kultūros pamokas, aš padėčiau jam treniruotis ir mokytis žaisti.

7–11 teiginiai (sakiniai) susiję su **krepšinio** taisyklių pakeitimais. Primenu, kad apibraukiate "taip", jei sutinkate, "tikriausiai taip", jei sutinkate, bet nesate tikri, "tikriausiai ne", jei nesutinkate, bet nesate tikri, ir "ne", jei nesutinkate.

- 7. Žaidžiant krepšinį noriai perduočiau kamuolį [Slapyvardis].
- 8. Žaidžiant krepšinį sutikčiau, kad [Slapyvardis] galėtų mesti į žemesnį krepšį.
- 9. [Slapyvardis] galėtų ilgiau stovėti trijų sekundžių zonoje (pvz., 5 sekundes vietoje 3).
- 10. Žaidžiant krepšinį nebūtų galima perimti kamuolio iš [Slapyvardis], kai jis atlieka perdavimą.
- 11. Aš pasiruošęs padėti [Slapyvardis] pelnyti taškus.

## 2 situacija: Atsakymų lapas

#### KLAUSYKITE SKAITOMŲ SAKINIŲ IR APIBRAUKITE ATSAKYMĄ

1.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
2.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
3.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
4.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
5.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
6.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
7.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
8.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
9.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
10.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
11.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE

# VERSKITE KITĄ LAPĄ $\rightarrow$

#### 3 situacija

[Slapyvardis] yra jūsų bendraamžė. Ji turi sunkų regėjimo sutrikimą ir mato tik labai arti esančius žmones bei daiktus. Jai patinka sportuoti ir žaisti tokius pačius žaidimus kaip ir jums. Jai reikia pagalbos judėti sporto salėje. Pavyzdžiui, bėgant jai rėkėtų jūsų pagalbos: pasilaikyti už jūsų ir jums reikėtų dažniau sakyti žodines užuominas (įspėjimus). Dėl blogo regėjimo ji nemato rodomų judesių, todėl jai reikia žodinių instrukcijų ir liečiamųjų judesių, kad suprastų, kaip atlikti judesį. Žaidžiant komandinius žaidimus (pvz., kvadratą, futbolą), saugumo sumetimais reikia, kad šalia jos kas nors būtų ir pasakytų, kurioje aikštės vietoje ji yra, taip pat kamuolio su garsu, kad žinotų kur žaidimo metu yra kamuolys. Ji neturi kamuolio gaudymo įgūdžių, tačiau ji gali mesti arba spirti kamuolį į taikinį su garsiniu signalu. Kai klausysitės mano skaitomų sakinių, galvokite apie [Slapyvardis].

(Dabar galvokite apie [Slapyvardis] ir prisiminkite, kad apibraukiate "taip", jei sutinkate su sakiniu, "tikriausiai taip", jei sutinkate, bet nesate tikri, "tikriausiai ne", jei nesutinkate, bet nesate tikri, ir "ne", jei nesutinkate).

- 1. [Slapyvardis] galėtų dalyvauti mūsų kūno kultūros pamokoje.
- 2. Dėl [Slapyvardis] žaisčiau lėčiau, nes ji negali žaisti greitai.
- 3. Jei žaistume komandinį žaidimą, pvz., kvadratą, aš sutikčiau, kad [Slapyvardis] žaistų mano komandoje.
- 4. Jei [Slapyvardis] ateitų į mūsų kūno kultūros pamoką, būtų smagu.
- 5. Jei [Slapyvardis] lankytų mūsų kūno kultūros pamokas, aš su ja kalbėčiau ir draugaučiau.
- 6. Jei [Slapyvardis] lankytų mūsų kūno kultūros pamokas, aš padėčiau jai treniruotis ir mokytis žaisti.

7–11 teiginiai (sakiniai) susiję su **kvadrato** taisyklių pakeitimais kūno kultūros pamokose jums tiktų, jei kartu žaistų [Slapyvardis]? Nepamirškite apibraukti "taip", jei sutinkate, "tikriausiai taip", jei sutinkate, bet nesate tikri, "tikriausiai ne", jei nesutinkate, bet nesate tikri, ir "ne", jei nesutinkate.

- 7. Žaidžiant kvadratą sutikčiau, kad būtų naudojamas kamuolys su garsu.
- 8. Žaidžiant kvadratą norint išmušti [Slapyvardis] kamuolys būtų ridenamas.
- 9. Laikyčiau [Slapyvardis] už rankos ir dažniau sakyčiau žodines užuominas (įspėjimus).
- 10. Sutikčiau, kad [Slapyvardis] nebūtų galima išmušti, jei ji būtų arti vidurio linijos.
- 11. Padėčiau [Slapyvardis] atlikti permetimą.

### 3 situacija: Atsakymų lapas

#### KLAUSYKITE SKAITOMŲ SAKINIŲ IR APIBRAUKITE ATSAKYMĄ

1.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
2.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
3.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
4.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
5.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
6.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
7.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
8.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
9.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
10.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE
11.	ΤΑΙΡ	TIKRIAUSIAI TAIP	TIKRIAUSIAI NE	NE

**KLAUSIMYNO PABAIGA** 

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AČIŪ UŽ SKIRTĄ LAIKĄ!

## **INFORMATION ABOUT THE AUTHOR**

Education	2006–2010, Lithuanian Academy of Physical Education, Adapted Physical Activity (Bachelor of Science)
	2010–2012, Lithuanian Academy of Physical Education, Adapted Physical Activity (Master of Science)
	2014–2018, Lithuanian Sports University, Doctoral studies in Social Sciences, Education
Professional experience	January 2011 to July 2011, Lithuanian Academy of Physical Education, Department of Recreation, Tourism and Sports Management, administrator
	October 2012 to March 2015, Kaunas Clinical Hospital, Unit I of Physical Medicine and Rehabilitation, massage therapist
	October 2014 to July 2017, Lithuanian Sports University, Department of Sports Coaching, administrator
	October 2014 to July 2017, Lithuanian Sports University, Department of Applied Biology and Rehabilitation, lecture
	March 2018 to June 2018-06, Kaunas Educational Centre of the Deaf and Hard-of-Hearing, educator
Traineeships	April–June 2016, Participated in the Erasmus + program for higher education. Scientific Practice was done at the Department of Special Education in Stockholm University, Sweden
Participation in projects	April–August 2010, The Nordplus project: Applied behaviour analysis, systems theory and developmental disabilities such as autism (Stockholm University)
	2012 to 2016, Social Art Project. 12-BR-20 "Art of human well-being", funded by the Ministry of Culture of the Republic of Lithuania
	January 23–27, 2017, "Erasmus +" program financed project 557067-EPP-1-2014-1-NL-SPO-SCP "Sport Empowers Disabled Youth" (SEDY) group meeting at Loughborough university (United Kingdom)
	December 2018 – present, "Erasmus +" program financed project 2018-1-SE01-KA203-039079 "Up & Go"

Volunteering	May 2010, "Healthy athlete" program, Lithuania, voluntary testing of athletes with intellectual disabilities	
	2015–2017, volunteering in summer camps organized by Lithuanian Community for Persons with Intellectual Disabilities "Viltis" [Hope]	
	2018 – present, Lithuanian Community for Persons with Intellectual Disabilities "Viltis" [Hope] (Vilnius)	
Research interests	Inclusive education for children with special educational needs; self-efficacy of physical education teachers; children's attitudes towards peer participation in physical education lessons; adapted physical activity	
Email	dovile.selickaite@gmail.com	