

KAUNAS UNIVERSITY OF TECHNOLOGY  
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**PECULIARITIES OF UNIVERSITY TEACHERS'  
ACTIVITIES FOR ADAPTATION OF INNOVATIVE STUDY  
METHODS**

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## Introduction

**Relevance of the study.** In the rapidly changing society, the teaching/learning process is also undergoing constant change: the emergence of information communication technologies (ICT) and various educational innovations, including digital content (virtual learning environments, Facebook groups, chat rooms, mobile and web apps) change not only the students' learning methods and strategies but also teachers' competences and activities (Sergeev, 2016; Min, 2017).

Shaepfer (2009) and Vila *et al.* (2012) argue that paradigmatic changes lead to the need for a new approach to teaching and learning focused on the student and the development of their competences. Heller *et al.* (2014) stresses that the usual teaching/learning process has changed. Teachers are fostered to create, to work from the inner desire, to listen more often than to talk, to inspire, motivate and empower more often than to teach. In this sense, teaching/learning methods are becoming increasingly important in this changing pedagogical system.

Danielson (2010) distinguishes that method is described as a combination of general principles, pedagogy and management strategies, that are used in the classroom. Each method has an aim (explicitly expressed and hidden), an action system, the tools needed to achieve the result, and an evaluation of the result. In the context of paradigm changes, the importance of **innovative study methods (ISM)** is emphasized.

Innovativeness is explained in two ways: in some cases, enhancement is emphasized (Rogers, 1995; Barden, 2012; Gounaris, Koritos, 2012; Hochgerner, 2013; Vallett, Annetta, Lamb, Bowling, 2014), while in other cases novelty to users is highlighted (Rogers, 1995; Janiūnaitė, 2004; Frankland, 2007; Zhang, 2010; Franz, Hochgerner, Howaldt, 2012; Wiseman, 2013; Guifang, 2014; Mintrop, 2016). Mintrop (2016) states that innovativeness is characterized by the inclusion of new ideas in already existing processes to make them more efficient, more sensitive, and more relevant to their users, or to provide more benefits. Nasierowski, Arcelus (2012) in analyzing the concept of innovation argue that innovativeness is associated with improvement, with raising the level. In this dissertation, innovation is treated as a novelty to its user – the teacher.

Innovations (as well as ISMs) are so named when they are new, untried and previously not used by a particular person, group or organization (Rogers, 1995; Janiūnaitė, 2004; Franz, Hochgerner, Howaldt, 2012). Frankland (2007) argues that an innovative way is a new and untested way for its user. There is unanimous agreement that innovation expresses the novelty of an object, phenomenon or action. The problem and lack of unanimity arise when it comes to deciding whether something is new to everyone, or just to a limited group of people.

Nasierowski and Arcelus (2012) state that an innovative result (product, theory, device, object, phenomenon, etc.) must be new to its user, but not necessarily new in the broad sense.

Thus the dissertation maintains that **innovative study methods are a system of student activities that is new and not attempted by their implementers (lecturers, groups or universities)**. In this way, they are oriented to one more innovative approach related to the content of the new object, process, and technology. Such methods are based on active activities (Exley, Dennick, 2009), help to solve complex contemporary problems (Biggs, Tang, 2011), enable the student to study independently, ensure parity cooperation with teachers (Jucevičienė *et al.*, 2010), are related to the real present context, situation and its issues, are based on a challenge-based methodology (Corradi, Evans, Valk, 2006; Sharples *et al.*, 2015) and are enriched with technological solutions (D'Angelo, Kasperūnienė, Rutkauskienė, 2010).

**Justification of the scientific problem.** Thus innovative study methods are characterized by novelty to their implementers (teachers, groups or universities) (Nasierowski, Arcelus, 2012). For a single teacher, the same method can be innovative, whereas, for another one, it may seem common and familiar. Also, a method can be considered innovative if it is new for a teacher, but known to a student. Innovative study methods may have different levels of implementation. They can be implemented throughout the course (Gray, Siegel, 2014), or can only be part of a lecture or a topic. Nielsen and Stovang (2015) argue that the implementation of ISM throughout a course shows a significant change in the educational paradigm when traditional didactics changes to the modern didactics. According to scientists, when applying ISM throughout a course, not only the teaching/learning method, but also the topics, the level of knowledge use, the teaching style, the relationship between the teacher and the students, the culture, place and assessment may be affected. In Dunne, Martin (2006), the application of the method throughout a course can influence and adjust the module topics. According to Gray and Siegel (2014), the method can not only affect the topics of the module, but it also changes tasks, activities, examples, etc. The entire innovative study method or some parts of it can be implemented (Lambic, 2014; Nielsen, Stovang, 2015; Serdyukov, 2017). In cases when only part of the method is implemented, in this dissertation, it is treated as the implementation and use of ISM.

Adoption of innovations as well as innovative study methods is faster and more advantageous when they are close in terms of cultural, social and value-based aspects, i.e., when they are adapted. Hochgerner (2011) emphasizes that innovations cause a lot of instability to persons accepting them, and push them out of their comfort zone (Serdyukov, 2017), make them change the established order. Innovations often make one change not only their behavior, but also thinking, values, and cultural aspects. Thus adaptation of educational innovations provides

more security to their users. Those ISMs that are customized, modified and transformed for cultural, moral and social aspects of their users are more acceptable, suitable, and they get adopted more easily.

Baier, Rammer and Schubert (2015) emphasize that adaptation of innovations is the most significant part of the adoption process. Teachers by implementing and applying ISMs have to adapt them to make the new method acceptable to students so that it could be beneficial (Blonder *et al.*, 2008); thus it increases the efficiency of teachers' activities (Min, 2017; Serdyukov, 2017). Hutcheon (2013) also adds that we retain in our memory elements that are repeated to us in a new, different form. In her opinion, our world is comprised of several billions of different people who live, imagine everything, understand, interpret and act differently. All the systems, activities and products have to meet people's needs. Hence they have to be customized and adapted. The author defines adaptation very primitively – as transfer of the same content into another 'body' (shape) when a new interpretation, additional value and/or benefit is obtained. However, this 'transfer' is very complicated and complex, it is based on (re-)interpretation and (re-)creation and tailoring to individuals, but it is still crucial for the improvement of students' learning.

Research in this field focuses on all the stages of innovation implementation, on whatever determines the emergence, adoption or rejection of innovation, how it is spread, and so on (Mahajan, Peterson, 1985; Rogers, 1995; Vijeikiene, Vijeikis, 2000; Jakubavičius, Strazdas, Gečas, 2003; Janiūnaitė, 2004; Denning, Dunham, 2006; Denning, 2012; Barbieri, Alvares, 2016, and others). The most common object of analysis is how ISM is used in lectures (Dunne, Martin, 2006; Velushchak, 2014; Munyai, 2016; Wrigley, Straker, 2017; Harding, 2018), what barriers are encountered (Peters, 2015; Magnussen, Senounou, Hilmy, 2018), what are the possible measures to reduce the identified barriers (Gray, Siegel, 2014; Nielsen, Stovang, 2015). Less attention is paid to the specific stages of the adoption process, for example, to the adaptation stage. It is often emphasized that it is necessary to adapt the learning content (Udvari-Solner, 1994; Shute, Zapata-Rivera, 2007; Bourrie *et al.*, 2014) while emphasizing the importance of adaptation and the benefits for learners (Blonder *et al.*, 2008; Jugo, Kovačić, Slavuj, 2016; Serdyukov, 2017), however, it is not analyzed what activities are needed in order to adapt innovative study methods.

With constant changes in the students, the teacher must possess the appropriate competences to adapt and modify educational innovations as well as study methods according to their users – students – at the same time not departing from the aim of the study program and the study subject (module) results. Although adaptation research is attracting more and more scientists from various fields, there is still lack of research related with the experience of teachers and activities during the adaptation process. On the one hand, the process of educational innovations (including innovative study methods) adaptation, the

teacher's experience, activities in various contexts (study programme, modules, students) is a relevant field of research because even in the case of the same method the lectures and experiences of each teacher will be different and contextualized; yet there is lack of such a type of research. On the other hand, the need for new scientific knowledge is also linked to the way how the innovative study method and its adaptation process influence both the curriculum of the module and the changes in the study program: a question arises whether such changes actually occur. In the above mentioned problem field, the dissertation aims to find answers to the problem questions: **What are the peculiarities of teachers' activities in adapting innovative study methods? How does the adaptation of an innovative study method affect other elements of the pedagogical system of the module?** These questions form the essence of the scientific problem solved in the dissertation.

**The aim of the dissertation** is to identify the peculiarities of teachers' activities by adapting innovative study methods.

The object of the dissertation research is the peculiarities of teachers' activities in adapting innovative study methods.

The following objectives have been set:

1. To systematize the peculiarities of university teacher activities while adapting innovative study methods and the process of innovative study methods adaptation.
2. To substantiate the research methodology to identify the peculiarities of teachers' activities by adapting innovative study methods.
3. To reveal the expression of the teachers activities and their peculiarities by adapting innovative study methods.

The dissertation research is supported by the following **theoretical** approaches:

- *The theory of innovations diffusion* (Rogers, 1995) discusses the process of adoption/rejection of innovations and the variables having impact on it. With regard to this theory, innovations (including ISM as well) are created and diffused to the users. In order to achieve more efficient and faster adoption of ISM, they are adapted.

- *Theory of adaptation* (Hutcheon (2013) emphasizes that all the systems, activities and products have to meet the needs of each user and have to be adapted. Adaptation is transfer of the same content into another setting when a new interpretation is obtained or a value and/or benefit is added. However, this 'transfer' "is complicated and complex, it is based on (re-) interpretation and (re-)creation." Hutcheon (2013) also adds that we tend to keep longer in our memory those elements which are repeated to us in a new and different form. Thus adaptation of new methods improves the process of memorizing the learning content. As Hutcheon (2013) maintains, adaptation is a very complicated process. The person who is carrying out adaptation has to be emphatic so that to be able to precisely foresee, feel and understand how to adapt in order to fascinate with the



new version and succeed. Often this does not happen at the first attempt, and adaptation becomes a constant never-ending process.

- *The typology of innovative study methods by levels of innovation* (Melnikas, Jakubavičius, Strazdas, 2000; Janiūnaitė, 2004; Wall, Ryan, 2010) highlights that innovation or novelty has certain levels. Innovative study methods are characterized by a key feature that they have to be new and not used before by the university teacher implementing them with a group, or at the university or country level.

- *The constructive philosophical concept of education* (Shaeper, 2009; Vila *et al.*, 2012; Heller *et al.*, 2014; Serdyukov, 2017) emphasizes that the learner is responsible for the learning process and that the learning methods must be adapted to the particular learner and the ever-changing context.

The dissertation research is supported by the following **methodological** approaches:

- *The concept of multiple case studies* (Yin, 2006; Cohen *et al.*, 2007; Creswell, 2007) aims to study a wide problem and to research it more profoundly – several cases are selected. It is commonly suggested selecting different cases, which would allow to reveal more diverse aspects of a problem, process or event. Selected ISM (problem-based learning, design thinking and case study) should be sufficiently different.

- *Triangulation of research* (Creswell, 2007; Olsen, 2012) emphasizes the harmonization of different methods of data collection in the same study. In this way, the validity of the research is assured because different methods or different samples are used for data collection.

The following **methods of data collection** were used:

- *Analysis of scientific literature* allows to define what is an innovative study method and what its key features are; it also allows to find out how in the context of an innovative process the adoption of ISM takes place and why its adaptation is needed, what the process ISM adaption is and what the key activities of a teacher are, and also, what variables affect the process of ISM adaption process.

- *Document analysis* allows to define the conceptual statements of the three selected innovative study methods (problem-based learning, design thinking and case study); it also allows to observe the change in study subject descriptions before implementing ISM and after adoption of ISM.

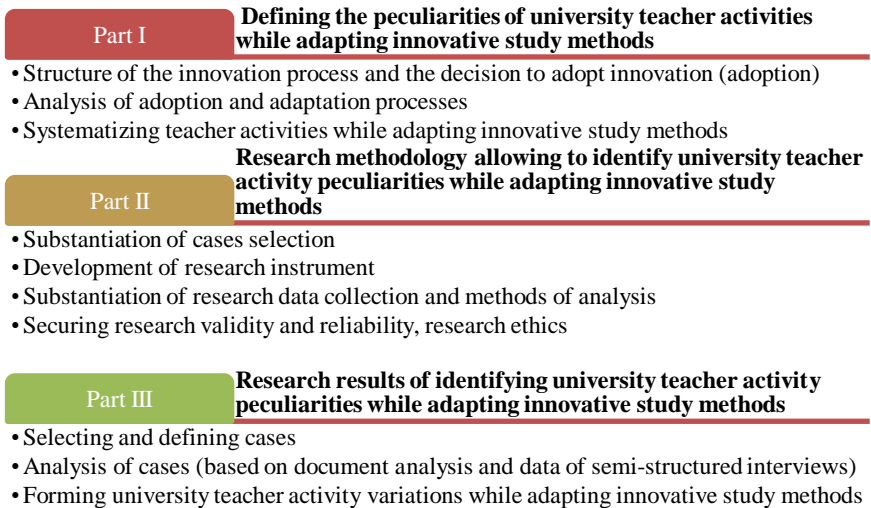
- *Semi-structured interviews* create conditions to make the ISM adaption process and the factors impacting it (which were found in literature analysis) more accurate so that to correct the theoretical model of adapting innovative study methods (ISM).

The following **methods of research data analysis** were used in the dissertation:

- *Quantitative content analysis* was used to process the interview data of lecturers and experts, to assess the frequency of speeches and to determine the number of stages in the ISM adaptation process and the main activities of the teacher during this process.

- *Deductive qualitative content analysis* was used to process data from document analysis, teacher and expert interviews, to characterize the peculiarities of teacher activities by adapting ISM and to determine how the adaptation of the innovative study method affects other elements of the pedagogical system of the module.

A flowchart of the dissertation research design is presented in Figure 1.



**Figure 1.** Dissertation research design flowchart

**Scientific novelty** and **theoretical significance** of the dissertation research: (1) the relationship between adoption and adaptation in the context of the innovative process is highlighted; (2) substantiation of the essential elements of the teacher’s activities at each stage of the ISM adaptation process and the elements that influence this process is performed; (3) the methodology to identify the peculiarities of the teacher’s activities while adapting innovative study methods is developed; (4) empirically determined peculiarities of the teacher’s activities while adapting innovative study methods in study modules and programs of different fields are outlined. **Practical significance** of the dissertation research: (1) quantitative and qualitative research material has been collected: it reveals the process of adapting innovative study methods in the teacher’s activities, illustrates

the complexity of the process and allows to model the variations of the teacher's activities while adapting ISM; (2) the developed research instruments allow to identify the variations of the teacher's activities while adapting innovative study methods; (3) recommendations have been formulated on the basis of the research carried out. Their implementation would encourage a faster adaptation of innovative study methods in the activities of teachers.

**Structure and volume of the dissertation:** The doctoral dissertation consists of an introduction, three parts, conclusions, recommendations and references. The volume of the work is 150 pages. The dissertation contains 24 figures and 5 tables. The list of references contains 164 positions.

## **REVIEW OF THE DISSERTATION CONTENT**

### **1. Peculiarities of University Teacher Activities while Adapting Innovative Study Methods**

*This part of the dissertation details the structure of the innovative solution process and the stage of the decision to adopt innovation (adoption), emphasizing that adaptation is one of the phase of the innovation decision process. The process of adaptation of innovative study methods and the essential activities of the teacher during this process are analyzed in this chapter.*

#### **1.1. Elements of the innovative study methods adaptation process**

In the process of ISM adaptation, not two (innovation and its implementer), but rather three actors are essential, which is usual in the processes of adaptation of other innovations: the innovation, the teacher and the student.

Adaptation of ISM depends on the features of every innovative study method and the way of getting it into the institution. The way how ISM reaches its users is of the type of 'bringing in' innovations, which is one of specific variables affecting the process of adaptation. As Janiūnaitė maintains (2004), educational innovations may be both internal and external, i.e., they may be developed in the local culture or 'borrowed' from another culture. Internal ISMs most often are closer to their users by their cultural, values, moral, economic and social background (Tura, Harmaakorpi, Pekkola, 2008). Due to these aspects, they require fewer changes when their adaptation is carried out, and thus their adoption may be met with less resistance.

Errington (2004) also explains that a higher resistance to educational innovations turns out when there is a 'top-down' directive to adopt innovations and use them. Often, teachers who are denoted by long-term work experience adopt and use innovations stemming from internal need and interests; they

understand students' aspirations and the changing concept of teaching and learning.

The process of ISM adaptation is faster and simpler in terms of 'internally emerging' ISMs and those that have more benefit to both teachers and students, that are simple to use, closer in their cultural, value and social background, those that can be tested in advance and show evident results. ISM with its specific features reaches the teacher, and then the further sequence of actions depends on the personality of the teacher as well.

It has to be noted that adaptation of ISM largely depends on the ISM itself (Aleixandre, Santamariá, 2010), i.e., what it is like, how many people it involves, how complex or simple it is, how fast it can be tested and whether evident results can be seen.

ISM with its specific features reaches the teacher, and then the further sequence of actions depends on the personality of the teacher as well. The teacher is the main actor in the process of adapting educational innovations as s/he makes the decision how to apply innovative study methods. This decision or success of ISM adaptation depends on the teacher's competence, personal features, views and previous experience in adapting educational innovations.

Blömeke (2008), Miller-Day *et al.* (2013) and Zhu *et al.* (2013) expressed an opinion that adaptation depends on the competence of the teacher. Those teachers who have adapted and used educational innovations also increase their competences – they as if get an added value from their actions (Moser, 2007). Zhu *et al.* (2013) found out that innovative teaching is most closely related to educational, technological and social competence.

Warford (2005), Hariri (2014) and Lapina, Slaidins (2014) emphasized that by analysing the processes of adaptation and adoption at the individual level, the personality and its features of every ISM user (in this case – teacher) become fundamentally important. In terms of ISM adaptation, the teacher's susceptibility to innovations (Zinkevičienė, Janiūnaitė, 2007), innovativeness (Rogers, 1995) and empathy are important (Boyer, 2004; 2009; 2010; Feshbach, Feshbach, 2009; Gross, 2010; Zaff, Lerner, 2010). Every teacher has her/his personal attitudes towards innovations (or ISM) which have been determined by personal beliefs and assessment of a/the situation (Hariri, 2014). The personal view may have been influenced by previous experience, when an innovation was adopted (or rejected) (Hariri, 2014). Having had a successful experience of an adapted innovation that has become functional and used on the daily basis, other innovations are assessed more favorably in comparison with the attitude of teachers with a negative experience.

The student is a third actor in the process of ISM adaptation. Jucevičienė *et al.* (2010) maintains that the establishments of higher education which seek to enable every student to study, their methods of teaching and learning have to correspond not only to the aim(s) and content of the studies but also to the needs, interests and

possibilities of students (Jucevičienė *et al.*, 275). In the process of ISM adaptation, the teacher decides how to adapt the subject matter with regard not only to his/her own needs, but to those of the students as well:

- differences of knowledge, available skills and abilities (Durlach, Lesgold, 2012). Lippke, Wegener (2014) do exist; thus learners are of different levels of abilities. That is why ISM should be oriented towards student abilities and competence.
- demographic and sociocultural differences (Conchas, 2006; Desimone, 1999; Fan & Chen, 2001) must be considered. Irungu *et al.* (2016) established that the demographic and social context has impact on students' interest, pursuits and values which directly affect the process of learning.
- differences of emotional variables: motivation, boredom, disappointment and trust (Conati, 2002; Ekman, 2003; Litman & Forbes-Riley, 2004; Picard, 1997; Qu, Wang and Johnson, 2005) must be taken into account. Ni, McKlin and Guzdial (2010) claim that teachers invest more time and effort in their interest to motivate and involve students, to provide more confidence and enable them to become empowered learners.

## 1.2. Teachers' activities in innovative study methods adaptation process

**Establishment of adaptable ISM elements.** Hord *et al.* (2008) maintains that ISM adaptation starts with an *establishment of adapted elements*. Furthermore, it is shaped the way an ISM should look like in its practical application. In order to develop a detailed picture, it is important to study as many as possible *sources analyzing ISM and to discuss about the main adaptable components* with the students. After the first step, the list of ISM adaptable components, dimensions and variations of use is compiled, i.e., the *list of adapted ISM elements has to be modified*.

Law *et al.* (2010) maintains that in order to determine which elements of innovative study methods are necessary to adapt help mental modeling, it is required to find out what the method is and what it would look like in the relevant lecture. Then it will be possible to distinguish among the necessary tasks, examples and assessment in order to achieve specific aims pursued by this method.

**Modification of adaptable elements.** Hord (2008) maintains that, after the identification of adaptable elements, it is necessary to *adapt it*. According to Udvari-Solner (1995), it is necessary (1) to identify individual aim(s) and goals of students; to plan (2) a topic(-s) and (3) activities, (4) teaching/learning method(-s) and to choose and implement other (5) elements of the lecture design: the presentation of the learning material, lecture format, student-oriented strategies, aim of the method suitable for the lecture, modified material and other aspects.

Each delivered study subject (module) has its core content that is fitted into ISM, the method helps to deliver the content (Sabine *et al.*, 2005; Blonder *et al.*,

2008)). Each ISM has specific activities, tasks and actions that have to be flexible in terms of the study subjects, *i.e.*, they have to be adaptable. Modification of tasks, activities and tests is mandatory with regard to module results.

Wright (2005) on the basis of Ebeling, Deschenes and Sprague (1994) researches and presents nine types of adaptation: 1) to adapt the way of the task presentation to students; 2) to adapt ways how students can carry out the task; 3) to adapt the time interval needed to complete a task, to learn or to do a test; 4) to adapt the level of skills, problem type or rules so that students could complete tasks; 5) to foresee and think over the level of assistance needed for students with special needs; 6) to adapt the number of elements to be learned by students; 7) to adapt the teaching/learning content; 8) to adapt the aim and outcomes; 9) to plan different instructions and means in order that students could achieve their learning aim(s). These ways defined by the author are relevant in the case of ISM adaptation.

As Puentedura (2005) points out, the same method, depending on its adaptation and integration, may be used differently: (1) at the stage of renewal, it allows to formulate new learning aim(s), objectives and activities; (2) at the stage of addition, ISM replaces other methods by improving the functions they performed; (3) at the stage of modification, ISM allows to significantly modify learning activities. In this respect, while adapting ISM, the number of activities within a lecture is expanded, which sometimes is highly significant when seeking to understand specific complicated learning elements; (4) at the stage of transformation, ISM completely replaces previous activities at the same time by transforming the teaching and learning process as well; thus new activities, which have not existed before, emerge.

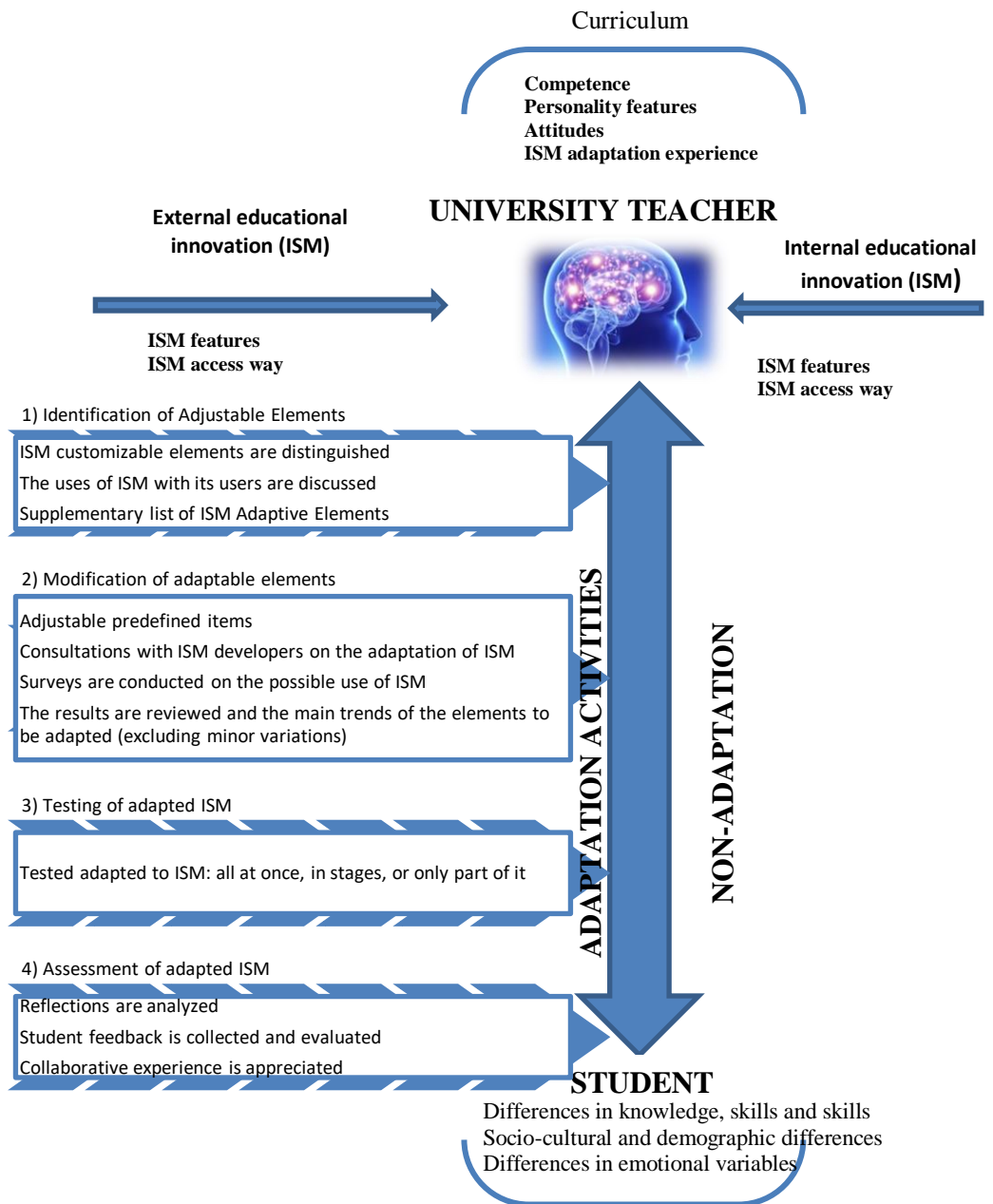
Then *consultations with ISM developers are held* about the modification of ISM. These consultations are highly important because the developers can explain the observed processes and to clarify the elements, to specify the variations of use, and the discrepancies between them and the vision of method users. A version of the list of adapted elements is used to *conduct surveys* and to find out a real use of ISM. Surveys often help to discover new adaptable elements, variations and dimensions of adaptation (Hord *et al.*, 2008). Later on, *results are reviewed, and the main trends of adapted elements are highlighted*, and, if necessary, insignificant minor variations are rejected in case there are too many categories.

**Testing of adapted ISM.** Based on the division by AbuJarad and Yusof (2010), testing of adapted ISM may be different depending on whether the adapted ISM will be tested all *at once or gradually*. In the first case, action is taken fast, and the usual behavior is altered dramatically, at the same time, higher risk is assumed because radical changes take place. In this respect, the teacher must be highly qualified and highly flexible; the teacher also needs to adapt quickly in new undefined situations, and, consequently, to be able to adapt and test the ISM. In the case of gradual testing, at first, one adapted ISM element reaches students, then

the next one, and later on – the third one. This way, the entire ISM is tested and adapted gradually. Based on the division by AbuJarad and Yusof (2010), the entire ISM, or a part of it (external or internal structures, e.g., the system of actions or means) may be tested. Adaptation and testing may involve not the entire ISM. In such cases when a certain ISM element is adopted, modified and tested, this can be called partial adoption.

**Assessment of adapted ISM.** Udvari-Solner (1995) emphasizes that it is crucially important to assess how successful the adaptation was/ has been. Taking into consideration the observations from students and colleagues, feedback about the expedience and accuracy of the teacher's actions is received. Lourillard (2012) maintains that feedback includes *reflection, student comments and colleague opinions*. Reflections help review observations, barriers, hindrances and new experiences (Bubnys, 2012; Jucevičienė *et al.*, 2013; Serdyukov, 2017) related to the adaptation of ISM. While analyzing the gained experience, it is possible to develop, improve and change the behavior in terms of ISM adaptation, and to have a fresh look at the prospect. Student feedback becomes very important in this process (Dabbagh, English, 2015), as the method is adapted to help students perform certain teaching and learning activities better, to learn the content better, etc. Students may present their opinions, remarks and suggestions from their point of view and to assess the teacher's efforts (Jefferies, Hyde, 2009). Sharing good practices with colleagues (Ni, McKlin, Guzdial, 2010), seeking advice from them about adaptation of ISM, discussions and cooperation is also beneficial (MacKenzie, 2010).

With regard to the distinguished four key stages of the innovative study methods adaption process and more detailed teacher's activities in the context as well as the essential variables impacting this process, they may be integrated into our model of *Innovative Study Methods Adaptation (ISMA)* (see Figure 2).



**Figure 2.** Innovative Study Method Adaptation (ISMA) model



## **2. Substantiation of Research Methodology in Identifying Peculiarities of Teacher Activities while Adapting Innovative Study Methods**

*The first chapter of the dissertation emphasized and substantiated the model of innovative study methods adaptation (ISMA) that will be tested empirically. This chapter will describe the details of empirical research methodology.*

### **2.1. Research strategy and logic in identifying teacher activity peculiarities while adapting innovative study methods**

Empirical research aims at identifying the activities of innovative study method adaptation in the context of the teacher's activities, i.e., determining what variables affect them and then identifying and substantiating the variations of the teacher's activities while adapting innovative study methods.

It was decided to carry out the research by using **case studies** when one or several cases of social problem expression were analyzed.

During the stage of the first empirical study, the objective was to define the number of cases and key criteria for selection.

X university has an established Faculty Development Center, also there is a programme dedicated to teachers. On this basis, the experts of the centre together with teachers integrate ISM into study subjects (modules). In 2017–2018, work was carried out with three innovative study methods – *Problem-Based Learning*, *Design Thinking* and *Case Study*. The three methods were selected as cases in the first empirical research in order to specify that the empirical research of the dissertation will be based on the study of multiple cases. Having chosen particular cases that are applied in a specific organization, it is easier to define the limits of cases, which is important during case research. During the study of multiple cases, the objective is to study a wider issue and several cases rather than to choose one single case for more profound analysis (Creswell, 2007). It is often suggested to choose for such a study different cases that would allow revealing more diverse aspects of a problem, process or event. The selected ISMs (Problem-Based Learning, Design Thinking and Case Study) are different enough, that is why it is supposed that this will help to carry out more thorough analysis in terms of case analysis of this dissertation research.

Teachers (12 participants in the study) and experts (3 participants in the study), all of whom were full-time employees, were selected by using the target sample selection method. The research instrument was developed on the basis of the model of innovative study methods adaptation as defined during the analysis of scientific literature.

Research data was collected by conducting document analysis (ISM descriptions, matching documents, *Moodle* environment and study subject

(module) descriptions/cards and partially structured interviews (with ISM teachers and experts presenting their training).

Document analysis was performed by deductive qualitative content analysis; data collected during interviews was analyzed by using quantitative content analysis and deductive qualitative content analysis. Quantitative content analysis allowed determining the grounds of a number of steps of the ISM adaptation process and the main activities of the teacher during these stages. Deductive qualitative content analysis enabled to analyze and describe the ISM adaptation process in the context of the teacher's activity, which allowed distinguishing the peculiarities of the teacher's activities by adapting to ISM.

### **3. Expression of University Teacher Activities while Adapting Innovative Study Methods**

*This part of the work presents the results of empirical research. First of all, research results on identifying the peculiarities of teacher activities will be presented, and, subsequently, the obtained results will be analyzed and interpreted in the context of other research works.*

#### **3.1. Discussion and research results of teacher activity peculiarities while adapting innovative study methods**

This section will analyze teacher activities while adapting ISM and empirical research results; a discussion will be presented.

With regard to research results presented above, we may state that the process of ISM adaptation in practice revealed itself in more detail than it was analyzed in the explored literature. Literature review emphasized that the process of ISM adaptation consists of four stages: identification of ISM elements to adapt, adaptation of the identified elements, testing of the adapted ISM, and assessment of the adapted ISM. During the interviews, it became clear that the process could consist of more stages as, by defining the categories of ISM process adaptation, seven categories became evident: selection of ISM, collecting information about ISM, the stage of considerations (adoption), adaptation of ISM, testing of the adapted ISM, maintenance, and analysis of the adaptation process.

In comparison with the process of innovative solution which was discussed in the literature review, the subcategories of ISM selection and the collection of information about ISM as well as the consideration (adoption) stage could be attributed not to the process of ISM adaptation but rather to the first three stages of the decision to adopt ISM which go before its adaptation.

In the first stage of the innovative decision process, all the necessary information about ISM is collected and obtained. This would correspond to the highlighted subcategories of ISM selection and information about ISM collection.

The second and third stages of the innovative decision process are related to considerations about innovation and the decision to adopt it. These two stages of the innovative decision process correspond to the subcategory of the third stage of consideration (adoption).

However, with regard to the adoption process analyzed in the literature review that was presented by Alexandre and Santamariá (2010), we could see that analysis of ISM is indicated as the first stage of ISM adaptation process. Blonder *et al.* (2008) also presents the selection of ISM as the first stage of ISM adaptation process. Thus, with regard to the information from the respondents, a stage of preparation for adaptation may be distinguished.

Researchers (Blonder *et al.*, 2008; Hord, 2013) maintain that, before adapting ISM, it is important to analyze as many sources as possible while analyzing ISM and to discuss about the main components adapted both with the developers of the innovative study method and with the consultants of its implementation process. During the research, it became evident that teachers often collect information about methods independently, they also go to specialized trainings of method application and consult with colleagues or with presenters/consultants of the method.

The theoretical part of the dissertation highlighted that, after the first step, a list of elements to be modified may be made. However, during the empirical research, it turned out that teachers tend to consider the method once again in order to investigate it well and to assess to what degree it is suitable to achieve specific results and how it could be applied to their study subject or module. After all those considerations, they make a mental vision of a module with an ISM and determine how it could help the students' learning process. Previously, this has not been stressed in the research of other scientists whose works are covered in this thesis.

In addition, there was no clear indication to what extent and how the method should be adapted after planning; thus further surveys would be carried out about the possibilities of using the method. Not all the respondents (although a larger part of them) after foreseeing to what extent and how to adapt the method participated in consultations with the method presenters/consultants. This activity was also mentioned in the course of our literature review, when the emphasis was that after having compiled a list of elements to adapt, consultations with the developers of the innovative method were held about the observed variations i.e., how one could use the method.

During the stage of adaptation, teachers carried out different activities. Hord (2013) claims that, after identifying elements to be adapted, the modifications have to be applied. During the research, two different versions emerged: in one group of adaptation cases, the module aim and outcomes were adjusted only when ISM was being adapted; whereas, in other cases, neither the outcome nor the aim changed. In the case of PBL, the respondents noticed that neither the aim nor the outcomes changed because they searched for a problem that would meet the aim

and outcomes of the module. In the instances of case study and design thinking methods, it was observed that, sometimes, the outcomes were corrected when ISM was integrated into the module, and in other cases, they were not corrected. When speaking about the case study method, respondents emphasized that in the cases when neither the aim nor the outcomes were changed, it is important to choose a suitable case. Meanwhile, the respondents who talked about the design thinking method mentioned that the outcomes are supplemented by the fact that the method makes them investigate end-users and create innovations from their perspective.

In all the cases, the respondents emphasized that by adapting students' activities and tasks, teachers rearrange them in a structure suggested by the method. They have stressed that they completely change tasks for students when they have to encourage: to analyse certain cases, through the analysis of which certain competences are developed; to solve problems and learn by solving them; to develop solutions to challenges on the basis of users' needs. The respondents noted that they had to adapt the contents of the lectures to the key principles of the method, and with regard to the method, they have to change some topics, tasks and the time to do them and conduct assessment.

The empirical research has revealed that as teachers essentially change the tasks for students, accordingly, some changes in the assessment have to be made, too. In all the cases of all the three methods, the new elements – supplementary assessment of the students' work process and peer assessment – were added.

During the empirical research, the respondents stated that, when adapting ISM, they held consultations with the presenters/consultants of the method. Some of them had discussions with colleagues who had adapted the method in their study subjects and/or modules. Later on, as Hord (2013) maintained, a working initial version of the list of elements to be adapted by conducting student surveys was used; it aimed at viable use of ISM. However, during the course of the research, this stage did not become visible at all. The respondents mentioned that they meet students for the first time only when the course has started, and it is too late at that stage to ask students.

During the semi-structured interview, it became clear that testing an adapted ISM may be various depending on two things: (1) if the adapted ISM is applied at once in the module, or gradually, and also (2) if the whole method will be adapted and tested, or only a part of it (external or internal structures, e.g., the system of actions or means). Most commonly, the methods that we investigate were adapted in a part of the course. In addition, many respondents maintained that they tested ISM during the entire course. AbuJarad and Yusof (2010) claim that it is faster to act this way, but risks taken on are larger because radical changes take place. This was also mentioned by the respondents who said that they had to redevelop the module, they changed the activities, tasks, tests and assessment in essence, and, during the process, the aim and objectives of the module changed as well. The

teachers who did not want radical changes chose to introduce ISM gradually, by implementing every new ISM stage, step and element.

During semi-structured interviews, it turned out that teachers need full support both from the students, colleagues, study programme committee and the study programme leader. During the research literature analysis (e.g., Denning (2012)), a few remarks by several scientists were found about the importance of support; however, nobody identified it as a separate stage or a prerequisite.

During the empirical research, a clear-cut stage of ISM adaptation was distinguished when teachers tried to collect all observations about the ISM that was being carried out and to assess the process. The interview results revealed that teachers collect students' feedback after testing the method. Many of them observe their students, note their reactions, and observe how they are learning and how the main outcomes of the module are achieved. All the informants reacted to the students' feedback and, after assessing it, tried to make improvements in the process of ISM adaptation. We also discovered that all teachers not only record their reflections but also documented all the process. During the study, sharing experience with colleagues was not mentioned, and only a few respondents mentioned that they share their experience, challenges and recommendations with their colleagues.

During case studies, the focus was on the actors of the ISM adaptation process who were significant to this process. Adaptation of ISM depends on the individual teacher's features as well as ISM features, and it is closely linked to the students who attend the module.

The research respondents mentioned that adaptation of ISM depends on the competence of a teacher. In this respect, educational competence and its importance were mentioned, although other scientists emphasize both technological and social competences as well. As the respondents maintain, those teachers who are open to novelties seek for diversity, try to avoid monotony in their classes, are curious and want to improve all the time also tend to adapt ISM.

While adapting ISM, previous experience in adapting methods is crucially important. During the literature review, it was noticed that, with successful experience, when an innovation to be adapted has become functional and used in everyday activities, other innovations are evaluated more favorably than in the cases with negative experience (Hariri, 2014). However, our analysis of cases showed that successful experience motivates, although unsuccessful experience may not necessarily cause negative emotions toward other innovations.

Our case study demonstrated the importance of additional components as well, such as preparedness of a teacher and the resource of time. The respondents emphasize that it is fundamentally important to find time to read about new methods, to study them more profoundly, and to find suitable ones. In this case, the events of sharing good practices and various trainings about methods are very useful because structured and concentrated information is presented, and the

teacher's time is saved this way. It is also important that teachers adapt methods when they are prepared for that. The respondents mentioned that, when they tried to adopt the methods without preparing properly and without possessing proper understanding about them, such attempts failed.

During the semi-structured interviews, we learned that ISM adaptation is closely related to how the respondents found out about the method. As the respondents pointed out, the inner will to adapt and use ISM is necessary. They observed that in the cases when there are external directives to adapt the method, the work is done unwillingly, and the quality of the adaptation of the method suffers.

Literature review helped distinguish that adaptation of ISM depends on the features of the innovative study method (Aleixandre, Santamariá, 2010). The respondents indicated that it is simpler to adapt such methods which are easy to apply, while involving students in activities which are universal for all study areas, are flexible and can be integrated in parts, and it is easy to find information about them; they also save the teacher's time and yield benefits.

Case analysis demonstrated the importance of additional components: the significance of the method's features and the significance of the method spread for ISM adaptation. According to the respondents, it is easier to adapt the methods that are widely spread as, in such cases, it is easier to find information about them and to discuss about the problems and barriers of the method. Methods may have different conceptual attitudes, they are easier to adapt because they are more universal and more suitable for a wider range of study subjects.

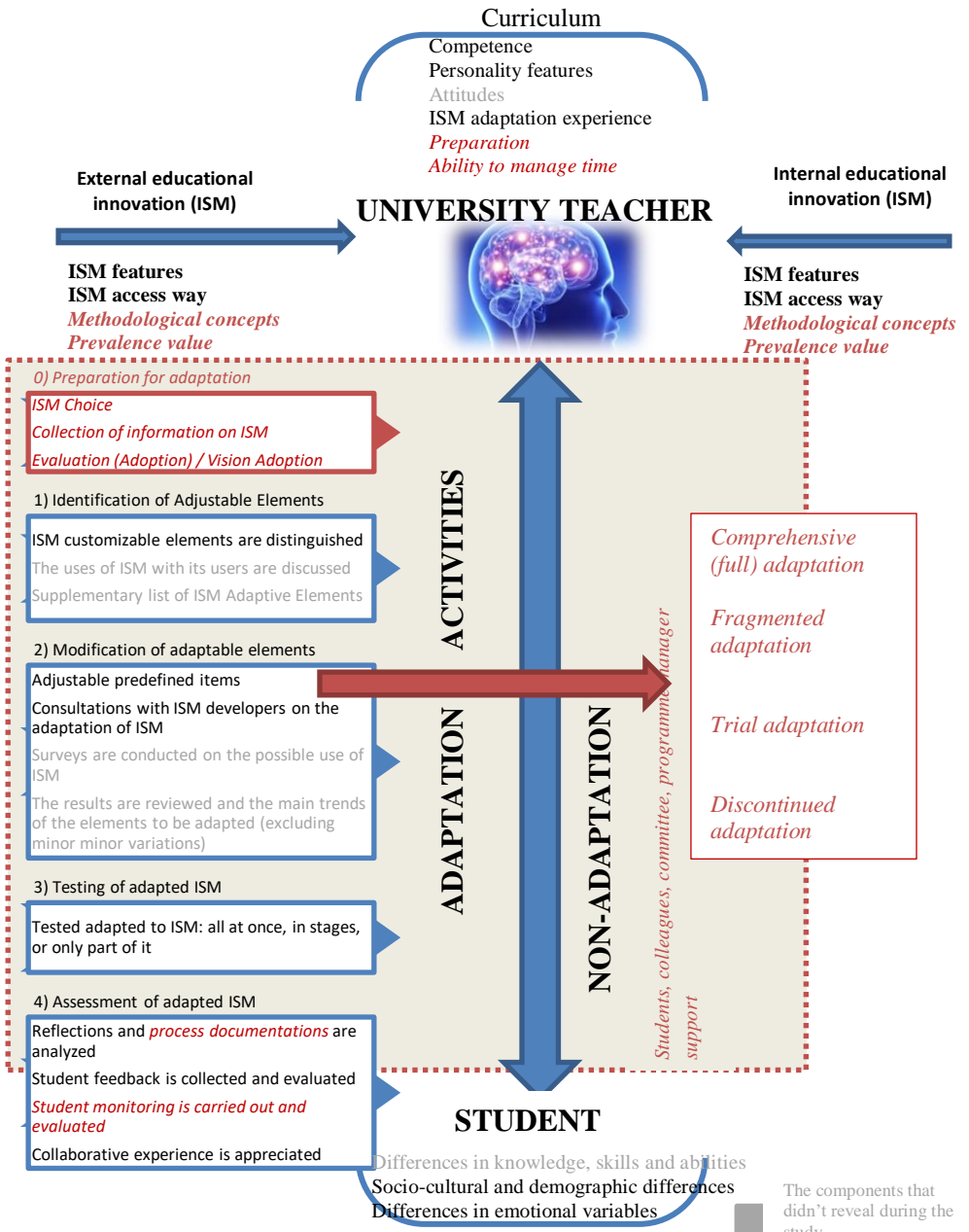
During the semi-structured interviews, we learned that teachers adapt ISM depending on specific features of students. First, the teacher adapts ISM because students come to lectures with different initial knowledge and skills related to the subject (Durlach, Lesgold, 2012). This aspect became evident in the statements of only a few respondents who mentioned that they need to adapt and present additional tasks to balance their students' knowledge, and that they could solve the presented problem. Other respondents mentioned that these were not special tasks, activities or other elements of a lecture that are adjusted to their students' level of knowledge. It was emphasized that students can learn from each other.

Another reason why teachers have to adapt ISM is the demographic and sociocultural differences of students that determine the differences in the learning outcomes and achievements (Conchas, 2006; Desimone, 1999; Fan and Chen, 2001). During the empirical study, it was identified that teachers have to additionally motivate, ask again, or ask direct questions. In such cases, students are divided into different teams, they are encouraged to integrate and communicate with students from other cultures; also, at the beginning of a semester, they prepare additional tasks to get acquainted and thus to make students' integration smoother and to encourage them.

During the semi-structured interviews, we learned that teachers adapt ISM depending on emotional variables. Teachers indicated that they pose provoking or additional questions, divide students into diverse groups, give additional points for active participation, and encourage students to present the result of their work.

In summary, we could maintain that both during the literature review and the empirical research it was identified that all the three variables – innovations, teacher and student features – are key actors in the process of ISM adaptation, and they have the highest importance in the process. The empirical research added the components related with the features of innovation (in this case – ISM) and teacher, that could be systemized into an expanded ISMA model (see Figure 3).

According to the data, four ISM adaptation variations can be formed – complete, fragmented, trial and discontinued. These variations of teacher activities include four key stages of ISM adaptation with specific activities during each stage.



**Figure 3.** Model of innovative study methods adaptation (ISMA)



## CONCLUSIONS

1. Systematized peculiarities of ISM adaptation process:

1.1 The key stages of the ISM adaption process include the identification of the adapted ISM elements, the adjustment of the adapted elements to the audience and lecture, trial of the adapted ISM and analysis of the ISM adoption process. They are in a kind of cycle constantly turning around.

1.2 The process of ISM adoption depends on three variables: the teacher, the student and the innovation (in this case, ISM). The teacher is the most important participant in the system of ISM adaptation as s/he decides on how to adapt ISM. However, this process takes place in interpersonal communication with students. Adaptation of ISM depends on the personal features of the teacher, their attitude and previous experience in adaptation. When adapting ISM, the differences of the student's knowledge and abilities, sociocultural and demographic differences and differences in emotional variables are taken into account. It is important to pay attention to the features of ISM and the way of access as these factors determine the speed and complexity of ISM adaptation.

1.3 The key teacher activities in every stage of ISM adaption process include the following: (1) in the stage of identifying the elements to adapt, adapted ISM elements are distinguished, versions of ISM use are discussed with their users, and the list of adapted ISM elements is expanded; (2) in the stage of applying the adapted elements to the audience, the previously singled out elements are adapted, consultations with ISM developers about ISM adaptation are held, surveys about the possible use of ISM are conducted, results are reviewed, and the main trends of the adapted elements are highlighted; (3) during the stage of the adapted ISM trial, adapted ISM is tested during the entire course, gradually, fully or only partially; (4) in the stage of adaptation assessment, reflections are analyzed, students' feedback is collected and evaluated, and peer experience is assessed.

2. The research methodology for identifying teacher activity peculiarities while adapting innovative methods is based on the case study research strategy providing a possibility to analyze the studied teacher activity scenarios while adapting ISMs which are encountered in the natural environment. The research is based on the study of multiple cases – the peculiarities of teacher activity from the cases of three innovative study methods (case, problem-based and design thinking methods) are analyzed. The research data has been collected by using the methods of document analysis (ISM descriptions were analyzed together with documents introducing them, Moodle environments and subject (module) description forms) and semi-structured interviews (with teachers adapting ISM).

3. Scientific literature analysis and empirical research allows us to highlight the key stages of the ISM adaption process and teacher activities while adapting ISM:

3.1. The stages of the ISM adaption process include preparation for ISM adaptation, identification of ISM elements to be adapted, adjustment of the ISM elements to adapt to the audience and lecture, trial of ISM and analysis of the ISM adaption process. During ISM adaptation, the stage of preparation for adaptation is important when the teacher analyzes as many sources on ISM as possible, goes to specialized training of the method application, holds consultations with colleagues or with the presenters/consultants of the method. Then the teacher takes time to think and consider how to adapt the method and visualize how it could be adapted in their specific module.

3.2. The process of ISM adaption depends on three variables: the teacher, the student, and the innovation (in this case, ISM). The teacher's competence, attitude, personal features and previous experience of ISM adaptation, the teacher's preparation and availability of time all have an impact on ISM adaptation. Teachers adapt ISM to their students' sociocultural and sociodemographic differences and differences in emotional variables, but they tend not to adapt the method to different levels of knowledge of students as the goal is that students independently and from each other would gain new knowledge and skills. Adaptation of ISM depends on the way how it accesses and its features. Analysis of cases has revealed the importance of additional components, such as the significance of the conceptual attitudes towards the method and the significance of the method spread on the adaptation of ISM.

3.3. Key activities in every stage of ISM adaption process include: (0) the stage of preparation for adaptation when ISM is selected, information about ISM is collected and adoption of the method takes place; (1) in the stage of elements to adapt identification, a vision of the module with ISM is formed, and IAS elements to be adapted are distinguished; versions of ISM use with its users are discussed, and the list of adapted ISM elements is expanded; (2) the stage of adapting ISM for the audience includes adaptation of the previewed elements, consultations with ISM developers about the adaptation of ISM take place, surveys about the possible use of ISM are carried out, results are reviewed, and the main trends of the adapted elements are distinguished; (3) in the stage of the adapted ISM trial, the adapted ISM is tested throughout the entire course, gradually, in its entirety, or only part of it; (4) in the stage of the adaptation assessment, teacher reflections and documentation are analyzed, students are observed, and their feedback is collected, peer experience is evaluated.

3.4. Empirical research revealed the peculiarities of ISM adaptation that depend on different method. Two types of the problem-based learning method testing phase didn't reveal: testing throughout the course and testing gradually. Engineering and technology sciences teachers simplified the first two steps of the design thinking method (analyzing the situation and looking for solutions). They expanded the analytical and creative part, including analogues, patent analysis, detailing and extending the production phase.

3.5. The theoretical model of ISMA is expanded with more detailed components that emerged in the course of this research. A stage of the preparation for ISM is added when teachers collect the necessary information about ISM, assess it and consider its adaptation. The teacher's preparation and availability of time have an impact on ISM adaptation. Analysis of cases revealed the significance of additional components, such as peculiarities of the method, the significance of the features and the significance of the method spread for ISM adaptation. During the adaptation of ISM, the support of students, colleagues as well as committee and study programme leader(s) is highly important. In addition, assessment was conducted by documenting and student observation. Our ISMA model was expanded with all of these components.

3.6. Some elements of the theoretical model didn't reveal during the empirical study: that teachers would collect students' opinion before adapting the ISM, that they would introduce the customized version of ISM to students for assessment and observations (before testing). The results didn't reveal that the teachers would adapt ISM to students' knowledge, skills and differences in abilities. The importance of teachers' positive attitude to the ISM adaptation didn't confirm.

3.7. It was found that ISM adaptation affect the curriculum of the module and influences the changes in the study program. Adaptation of the ISM may influence the change of the purpose, results, tasks, activities, evaluation system of the study module. Applying ISM throughout the course and / or using the same method in several study modules leads to changes in the study program. i.e. local innovation leads to modular and / or systemic changes.

4. Depending on the established teacher activities during ISM adaptation, on the grounds of literature review and empirical research, we outline four teacher activity strategies:

4.1. In the case of the complete adaptation variation, during the stage of preparation, the vision of a study subject or a module with ISM is formed and elements to be adapted are distinguished. Then, tasks and activities are adapted, and the system is changed accordingly. In this case, the method brings about specific changes in the subject or module aim and its objectives. The trial of the method may be either gradual or tested at once across the entire course. In addition, a certain part, segment, or the entire method may be implemented. ISM adaptation is assessed by observing students, by collecting their feedback, by teachers documenting all of their actions, by reflecting on activities and by consultation with colleagues and consultants.

4.2. During fragmented adaptation, several tasks and activities are taken at once and presented to students, and the system of assessment is changed accordingly. In this case, the method does not bring about any changes in the subject or module aim and objectives. The trial of the method may be gradual, and also a part, a stage or a step may be implemented. One more possible case is when ISM is tested

within the framework of a task, a lecture or a cycle, i.e., in a part of a course. The process of adaptation is assessed by reflecting on one's activities.

4.3. During the trial adaptation variation, teachers adapt the tasks and activities they present to students without changing the system of assessment. In this case, there are no changes involved either in the aim or in the objectives of the subject or module. The trial of the method may be gradual, when the testing is gradual and when specific stages of the method are implemented. ISM may also be tested only within the framework of a task, a lecture or a cycle. The assessment of the adaptation process is highly important. It may be assessed by observing students and their reactions, or else by recording one's own reactions and observations. Following the variation of trial adaptation, the entire process of adaptation, activities and observations may be documented by recording every single step. Student feedback may also be collected.

4.4. Following the variation of interrupted adaptation, the vision of a subject or a module with ISM is formed during the stage of preparation for adaptation. ISM is incorporated, and it is visualized what lectures would look like while using this innovative study method. Then, specific elements of a lecture are distinguished, and it is planned what will have to be adapted and adjusted. Subsequently, teachers adapt the tasks and activities they present to students, and they consequently change the system of assessment accordingly. In this case, the method brings about certain changes in the subject or the module aim and its objectives. ISM is tested only within the framework of a task, a lecture or a cycle. If it fails, the adaptation is interrupted, and no more attempts to adapt ISM once more are made.

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**Dissemination of the dissertation research results** took place when giving presentations on the topic of the dissertation:

1) Presentation “Factors of social and technological innovations: similarities and differences” at the 12<sup>th</sup> conference “Social Sciences and Humanities – 2014: Challenges in the Context of Globalization”, KTU.

2) Presentation “Adaptation of e-learning tools as innovation: overcoming barriers using educational factors” at the 28<sup>th</sup> International Scientific Conference on Economic and Social Development, 19–20 April, 2018.

3) Presentation “Innovative study method adaptation: the power of an effective teacher” at the 9<sup>th</sup> ICEEPSY the International Conference on Education and Educational Psychology, 2–5 October, 2018.

4) Presentation “Adapting innovative study methods: a challenge to modern university teacher” at the 2<sup>nd</sup> Conference of the Lithuanian Association of Educational Research “Development and Education for the Wellbeing of an Individual”, 11–12 October, 2018.

5) Presentation “Scenarios of university teacher activities while adapting innovative study methods” at the 2<sup>nd</sup> Conference of the Lithuanian Association of Educational Research “Development and Education for the Wellbeing of an Individual”, 11–12 October, 2018.

6) Presentation “University teachers’ activities when adapting innovative study methods” at the 11<sup>th</sup> World Conference on Educational Sciences in Milan, 7–10 February, 2019.

The main statements of the dissertation research have been published in the following research publications which are listed by the Lithuanian Research Council as research periodicals in internationally recognized data bases:

1) Gaižiūnienė, L. (2015). Socialinių ir technologinių inovacijų adaptacijos veiksniai: Tapatumai ir skirtumai. *Tiltas į Ateitį*, 1(9), 103–108.

2) Gaižiūnienė, Lina, Janiūnaitė, Brigita. (2018). Adaptation of e-learning tools as innovation: Overcoming barriers using educational factors. *Economic and Social Development: 28<sup>th</sup> International Scientific Conference on Economic and Social Development, 19–20 April 2018, Paris, France: Book of Proceedings*, 403–412.

3) Gaižiūnienė, L. (2018). Inovatyvių studijų metodų adaptavimas: iššūkis šiandieniniam dėstytojui. *Scientific research in education, Vol. 2: the 2<sup>nd</sup> Lithuanian educational research association (LETA) conference and 2<sup>nd</sup> conference of doctoral students in education, 11–12 October, 2018, Klaipėda, Lithuania / Editing: Rūta Girdrzižiauskienė, Liudmila Rupšienė, Lilia Žukauskienė*. Klaipėda: Klaipėda University, 32–43.

4) Gaižiūnienė, L. (2019). Innovative study method adaptation: the power of an effective teacher. *The European Journal of Social & Behavioural Sciences*, 4, 2877–2890.

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### **Reziumė**

Moksliniuose tyrimuose, susijusiuose su inovacijų priėmimo procesu, yra kuriami arba adaptuojami inovatyvūs studijų metodai ir praktiškai tikrinama, ar jie bus priimami, ar – ne (ar priėmimo procesas bus sėkmingas) (Khatri et al, 2013; Orr, Mrazek, 2009; Pernaa, Aksela, 2013), tačiau mažai aiškinamasi, kaip jos buvo modifikuotos, pritaikytos jos vartotojams. Siekiant universitetų prisitaikymo prie besikeičiančios visuomenės ir ugdomojo proceso tobulėjimo reiktų daugiau dėmesio skirti dėstytojams ir juos pasiekiančių inovatyvių studijų metodų adaptavimui. Pasigendama tyrimų susijusių su inovatyvių studijų metodų pakeitimu, adaptavimu, jo skatinimu ar įgalinimu iš dėstytojų pozicijos. Taigi, kyla probleminis klausimas, **koks yra inovatyvių studijų metodų adaptavimo procesas?**

Ugdymo(si) procesas universitete yra paremtas dėstytojo ir studento sąveika (Cavagnaro, Fasihuddin, 2016; Faizah, 2011; Hariri, 2014; Jatkauskienė, Trakšelis, Nugaro, 2015). Todėl edukacinių inovacijų priėmimo procesas, o taip pat ir adaptavimo etapas, tiesiogiai priklauso nuo žmogiškųjų faktorių (Gounaris, Koritos, 2012; Hariri, 2014; Kirkman, 2012). Yra nuolat atliekami tyrima susiję su metodų adaptavimu aukštajame moksle iš mokymosi sutrikimų turinčiųjų perspektyvos (Zhang et al., 2014). Tačiau nuolat besikeičiant studentui, dėstytojas turi turėti atitinkamų gebėjimų pritaikyti, modifikuoti inovatyvius studijų metodus pagal jos naudotojus – studentus, tuo pačiu nenutolstant nuo studijų programos tikslų ir studijų dalyko (modulio) rezultatų. Galimai šios dėstytojo veiklos kinta

keičiantis studentams ir ugdomajam procesui. Tačiau nėra aišku: **Kokie yra galimi dėstytojų veiklų ypatumai, adaptuojant inovatyvius studijų metodus?**

**Disertacijos tikslas** – nustatyti dėstytojų veiklų ypatumus adaptuojant inovatyvius studijų metodus.

**Disertacinio tyrimo objektas** – dėstytojų veiklų ypatumai adaptuojant inovatyvius studijų metodus.

**Uždaviniai :**

1. Atskleisti dėstytojų inovatyvių studijų metodų adaptavimo proceso ypatumus.
2. Pagrįsti dėstytojų veiklų ypatumų nustatymo, adaptuojant inovatyvius studijų metodus, tyrimo metodologiją.
3. Pagrįsti dėstytojų veiklų raiškos ypatumus adaptuojant inovatyvius studijų metodus.

Disertacijoje remiamasi šiomis teorinėmis ir metodologinėmis nuostatomis: Inovatyvių studijų metodų tipologija pagal inovatyvumo lygmenis (Melnikas, Jakubavičius, Strazdas, 2000; Janiūnaitė, 2004; Wall, Ryan, 2010), inovacijų sklaidos teorija (Rogers, 1995), adaptavimo teorija (Hutcheon (2013), šiuolaikinio curriculum koncepcija (Shaepfer, 2009; Vila et al., 2012; Heller et al., 2014; Serdyukov, 2017) ir daugybinių atvejų tyrimo koncepcija (Yin, 2006; Cohen et al., 2007; Creswell, 2007).

Disertacijos tyrimas susideda iš keturių etapų. Pirmojo etapo metu atliekamas teorinis tyrimas, kuomet literatūros analizė padeda pagrįsti inovatyvių studijų metodų adaptavimo procesą. Šioje dalyje išskiriami inovatyvių studijų metodų adaptavimo proceso etapai ir veiklos. Sukonstruojamas modelis, kuriame susisteminami adaptavimo proceso veikėjai, kintamieji ir procesas. Antrame etape, atliekama atvejų atranka. Išskiriami esminiai atvejų atrankos kriterijai, kuriais vadovaujantis atrenkami trys skirtingi atvejai (inovatyvūs studijų metodai), kurie yra analizuojami empirinio tyrimo metu. Trečiasis etapas – atliekamas atvejų analizės tyrimas, siekiant empiriškai nustatyti, kaip vyksta ISM adaptavimas, kokie kintamieji jį veikia, kas jį sąlygoja? Prieš tyrimą, remiantis teorinio tyrimo metu sukonstruotu modeliu, sukurama tyrimo metodologija, kurios metu apibrėžiami tyrimo metodai (dokumentų analizė ir pusiau struktūruotas interviu), imtis, pagrindžiamas tyrimo instrumentas, numatoma tyrimo eiga ir etikos principai. Atlikus kokybinį tyrimą, gauti empiriniai duomenys sisteminami, analizuojami ir interpretuojami. Ketvirtasis etapas apima dėstytojo veiklos variantų formavimą. Empirinio tyrimo rezultatų pagrindu formuojami dėstytojo veiklos variantai adaptuojant ISM, išvados, rekomendacijos, patarimai, susiję su ISM adaptavimu. Išvados glaustai ir trumpai iliustruoja visą atliktą tyrimą, gautus esminius rezultatus. Pateiktos rekomendacijos gali būti sėkmingo ISM adaptavimo ir priėmimo pagrindu.

Duomenų analizė atliekama taikant kiekybinę turinio (content) analizę, dedukcinę kokybinę turinio (content) analizę.



Empirinio tyrimo metu yra pagrindžiama dėstytojų ISM adaptavimo veiklų ypatumai, kurie yra išskiriami teoriniame ISM adaptavimo proceso modelyje.

Empirinio tyrimo metu yra pagrindžiama dėstytojų ISM adaptavimo veiklų ypatumai, kurie yra išskiriami teoriniame ISM adaptavimo proceso modelyje. Teorinis ISMA modelis papildoma išryškėjusiais detalesniais komponentais. Yra pridedamas pasirengimo ISM adaptavimui etapas, kurio metu dėstytojas renka reikiamą informaciją apie ISM, ją įvertina ir svarsto dėl adaptavimo. ISM adaptavimui turi įtakos dėstytojo pasirengimas ir laiko turėjimas. Atvejų analizė parodė ir papildomų komponentų svarbą, tokių kaip metodo ypatybių, bruožų reikšmė ir metodo paplitimo reikšmė ISM adaptavimui. ISM adaptavimo metu yra itin svarbus studentų, kolegų, komiteto ir programos vadovo palaikymas. Taip pat vertinimas buvo daromas ir atliekant dokumentavimą ir studentų stebėseną. Visais šiais komponentais buvo papildytas ISMA modelis.

Disertacija yra aktuali ir unikali, kadangi priklausomai nuo (literatūros analizės metu ir empirinio tyrimo metu) nustatytų dėstytojų veiklų ISM adaptavimo metu, galima apibūdinti keturis išryškėjusius dėstytojų veiklų variantus: visapusišką, fragmentinį, bandomąjį ir nutrūkusį.

### **Išvados:**

1. Disertacijoje susisteminti dėstytojų inovatyvių studijų metodų adaptavimo proceso ir veiklų ypatumai:
  - 1.1. Inovacinis procesas yra sudarytas iš inovacijos sukūrimo ir jos sklaidos bei priėmimo etapų. Adopcijos sąvoka gali būti vartojama tuomet, kai yra kalbama apie ISM, kaip edukacinės inovacijos, priėmimo / atmetimo procesą. Adaptavimas yra vienas iš adopcijos proceso etapų, kai ISM yra pritaikomas atitinkamam kontekstui.
  - 1.2. Esminiai ISM adaptavimo proceso etapai apima adaptuojamų ISM elementų nustatymą, adaptuojamų elementų pritaikymą auditorijai ir paskaitai, adaptuoto ISM bandymą ir ISM adaptavimo proceso analizavimą. Tai yra tarsi nenutrūkstamas ciklas, kuris nuolat sukasi ratu.
  - 1.3. ISM adaptavimo procesas priklauso nuo trijų elementų: dėstytojo, studento ir inovacijos (šiuo atveju – ISM). Dėstytojas yra reikšmingiausias ISM adaptavimo dalyvis, kadangi jis sprendžia, kaip adaptuoti ISM, tačiau šis procesas vyksta tarpasmeninėje sąveikoje su studentu. ISM adaptavimas yra priklausomas nuo dėstytojo asmeninių savybių, požiūrio ir ankstesnės adaptavimo patirties. Adaptuojant ISM yra atsižvelgiama į studento žinių ir gebėjimų skirtumus, socialinius-kultūrinius ir demografinius skirtumus bei emocinių reiškinių skirtumus. ISM adaptavimo greitis ir sudėtingumas priklauso nuo ISM savybių, diegimo strategijos ir patekimo kelio.
  - 1.4. Pagrindinės dėstytojo veiklos kiekviename ISM adaptavimo proceso etape apima: (1) adaptuojamų elementų identifikavimo etape yra

- išskiriami ISM adaptuojami elementai, aptariami ISM panaudojimo variantai su jo vartotojais, papildomas ISM adaptuojamų elementų sąrašas; (2) adaptuojamų elementų pritaikymo auditorijai etape yra adaptuojami numatyti elementai, konsultuojamasi su ISM kūrėjais dėl ISM adaptavimo, atliekamos apklausos apie galimą ISM panaudojimą, peržiūrimi rezultatai ir išskiriamos pagrindinės adaptuojamų elementų tendencijos; (3) adaptuoto ISM bandymo etape yra bandomas adaptuotas ISM viso kurso metu, palaipsniui, jis visas arba tik jo dalis; (4) Adaptavimo vertinimo etape yra analizuojamos refleksijos, renkami ir vertinami studentų atsiliepimai, vertinama kolegų patirtis.
2. Dėstytojų veiklos ypatumų nustatymo adaptuojant inovatyvius studijų metodus tyrimo metodologija remiasi atvejo tyrimo strategija, suteikiančia galimybę analizuoti tiriamus dėstytojų veiklų ypatumus adaptuojant ISM, esančius natūralioje aplinkoje. Tyrimas remiasi daugybinių atvejų studija – analizuojami dėstytojų veiklų ypatumai, pasireiškę trijų inovatyvių studijų metodų adaptavimo atvejais (atvejo, problemų sprendimu grindžiamo mokymosi ir dizainu grindžiamo mąstymo metodais). Tyrimo duomenys rinkti dokumentų analizės (analizuoti ISM aprašai, juos pristatantys dokumentai, Moodle aplinkos ir studijų dalykų (modulių) aprašai / kortelės) ir iš dalies struktūruotų interviu (su ISM adaptuojančiais dėstytojais ir metodų mokytojais / ekspertais) metodais.
  3. Empirinis tyrimas leidžia išryškinti esminius ISM adaptavimo proceso etapus ir dėstytojo veiklas ISM adaptavimo metu:
    - 3.1. ISM adaptavimo proceso etapai yra: pasirengimas ISM adaptavimui, adaptuojamų ISM elementų nustatymas, adaptuojamų elementų pritaikymas auditorijai ir paskaitai, adaptuoto ISM bandymas ir ISM adaptavimo proceso analizavimas. ISM adaptavimo metu yra svarbus pasirengimo ISM adaptavimui etapas, kurio metu dėstytojas išnagrinėja kiek įmanoma daugiau ISM analizuojančių šaltinių, vyksta į specializuotus metodo taikymo mokymus, konsultuojasi su kolegomis ar su metodo pristatytojais / konsultantais.
    - 3.2. ISM adaptavimo procesas priklauso nuo trijų kintamųjų: dėstytojo, studento ir inovacijos (šiuo atveju – ISM). ISM adaptavimui turi įtakos dėstytojo kompetencija, nuostatos, asmeninės savybės ir ankstesnė ISM adaptavimo patirtis, dėstytojo pasirengimas ir laiko turėjimas. Dėstytojai pritaiko ISM prie studentų socialinių-kultūrinių ir socialinių-demografinių skirtumų bei prie emocinių reiškinų skirtumų, tačiau nėra linkę pritaikyti metodo prie skirtingų studentų žinių, kadangi jie siekia, kad studentai savarankiškai ir besimokydami vieni iš kitų įgytų trūkstamas žinias ir gebėjimus. ISM adaptavimas priklauso nuo ISM patekimo kelio ir savybių. Atvejų analizė parodė ir papildomų

komponentų svarbą, tokių kaip konceptualiųjų metodo nuostatų reikšmė ir metodo paplitimo reikšmė ISM adaptavimui.

- 3.3. Pagrindinės dėstytojo veiklos kiekviename ISM adaptavimo proceso etape apima: (0) pasirengimo adaptavimui etapą, kai yra pasirenkamas ISM, renkama apie informacija ir vyksta metodo apmąstymas (priėmimas); (1) adaptuojamų elementų identifikavimo etape yra sudėliojama modulis su ISM vizija ir išskiriami ISM adaptuojami elementai, aptariami ISM panaudojimo variantai su jo vartotojais, papildomas ISM adaptuojamų elementų sąrašas; (2) adaptuojamų elementų pritaikymo auditorijai etape yra adaptuojami numatyti elementai, konsultuojamasi su ISM kūrėjais dėl ISM adaptavimo, atliekamos apklausa apie galimą ISM panaudojimą, peržiūrimi rezultatai ir išskiriamos pagrindinės adaptuojamų elementų tendencijos; (3) adaptuoto ISM bandymo etape yra bandomas adaptuotas ISM viso kurso metu, palaipsniui, jis visas arba tik jo dalis; (4) adaptavimo vertinimo etape yra analizuojamos dėstytojų refleksijos, dokumentacijos, stebimi studentai ir renkami jų atsiliepimai, vertinama kolegų patirtis.
- 3.4. Empirinio tyrimo metu išryškėjo ISM adaptavimo ypatumai atsižvelgiant į metodų skirtumus. Neišryškėjo problemų sprendimu grindžiamo metodo bandymo etapo tipai, kai jis bandomas viso kurso metu, ir kai jis bandomas laipsniškai. Inžinerinių ir technologinių sričių dėstytojai, adaptuodami dizainu grindžiamo mąstymo metodą savo poreikiams, susiaurino, supaprastino pirmus du metodo proceso etapus, kai yra analizuojama situacija ir ieškomi visuomenei reikalingi sprendimai. Jie praplėtė analitinę ir kūrybinę dalį, įtraukdami analogų, patentų analizę, detalizuodami ir ilgindami gamybos etapą.
- 3.5. Po empirinio tyrimo teorinis ISMA modelis papildė išryškėjusiais detalesniais komponentais. Prie dėstytojo veiklą ISM adaptavimo metu yra pridėdamas pasirengimo ISM adaptavimui etapas, kurio metu dėstytojas renka reikiamą informaciją apie ISM, ją įvertina ir svarsto dėl adaptavimo. ISM adaptavimui turi įtakos dėstytojo pasirengimas ir laiko turėjimas. Atvejų analizė parodė ir papildomų komponentų, tokių kaip metodo ypatybių, bruožų reikšmė ir metodo paplitimo reikšmė ISM adaptavimui, svarbą. ISM adaptavimo metu yra itin svarbus studentų, kolegų, komiteto ir programos vadovo palaikymas. Taip pat vertinimas buvo daromas ir atliekant dokumentavimą ir studentų stebėseną. Visais šiais komponentais buvo papildytas ISMA modelis.
- 3.6. Empirinio tyrimo metu neišryškėjo kai kurie teorinio modelio elementai: kad dėstytojai būtų linkę dėl ISM adaptavimo tartis su studentais, kad atsižvelgtų į jų nuomonę prieš adaptuodami ISM, kad adaptuotą ISM variantą pristatytų studentams įvertinti ir pastebėjimams (prieš

- bandant). Taip pat neišryškėjo, kad dėstytojai adaptuotų ISM atsižvelgdami į studentų žinias, sugebėjimus ir įgūdžių skirtumus. Neišryškėjo dėstytojų teigiamo požiūrio svarba ISM adaptavimui.
- 3.7. Buvo nustatyta, kad ISM adaptavimas veikia modulio *curriculum* bei turi įtakos studijų programos pokyčiams. ISM adaptavimas gali turėti įtakos studijų modulio tikslo, rezultatų, užduočių, veiklų, vertinimo sistemos keitimui. Svarbu tai, kad ISM taikant viso kurso metu, ir / arba tuo pačiu metodu dirbant keliuose studijų moduluose, atsiranda pokyčiai studijų programoje. t.y. lokali inovacija sąlygoja modulinius ir/ar sisteminius pokyčius.
  4. Priklausomai nuo empirinio tyrimo metu nustatytų dėstytojų veiklų ISM adaptavimo metu, galima apibūdinti keturis išryškėjusius dėstytojų veiklų variantus:
    - 4.1 Visapusiško (visiško) adaptavimo varianto atveju pasirengimo adaptavimui etape yra sumodeliuojama studijų dalyko ar modulio vizija taikant ISM ir išskiriami adaptuojami elementai. Tada yra adaptuojamos užduotys, veiklos, atitinkamai keičiama vertinimo sistema. Šiuo atveju metodas nulemia tam tikrus studijų dalyko ar modulio tikslų ir uždavinių pakeitimus. Metodo bandymas gali būti tiek laipsniškas, tiek gali būti diegiamas iš karto viso kurso metu. Taip pat gali būti diegiama tik tam tikra metodo dalis, etapas, žingsnis arba visas metodas. ISM adaptavimas vertinamas stebint studentus, renkant jų atsiliepimus, dėstytojai dokumentuojant savo veiksmus, reflektuojant veiklas, tariantis su kolegomis ir konsultantais.
    - 4.2 Fragmentinio adaptavimo metu iš karto adaptuojamos studentams teikiamos kelios užduotys ir veiklos, atitinkamai keičiama vertinimo sistema. Šiuo atveju metodas nenulemia jokių studijų dalyko ar modulio tikslo ir uždavinių pakeitimų. Metodo bandymas gali būti laipsniškas, taip pat gali būti diegiama tik tam tikra metodo dalis, etapas, žingsnis. Dar vienas galimas atvejis – ISM bandomas tik pristatant užduotį, paskaitos, ciklo metu, t. y. dalyje kurso. Adaptavimo procesas yra vertinamas reflektuojant savo veiklą.
    - 4.3 Bandomojo adaptavimo varianto metu dėstytojai adaptuoja ir pritaiko studentams teikiamas užduotis ir veiklas, visai nekeisdami vertinimo sistemos. Šiuo atveju nėra atliekami nei studijų dalyko ar modulio tikslo, nei uždavinių pakeitimai. Metodo bandymas gali taikomas palaipsniui, po truputį vis diegiant tam tikrus metodo etapus. Taip pat gali būti ISM bandomas tik pristatant užduotį, paskaitos, ciklo metu. Adaptavimo proceso vertinimas yra itin svarbus. Jis gali būti vertinamas stebint studentus ir jų reakcijas, fiksuojant savo refleksijas ir pastebėjimus. Pagal bandomojo adaptavimo variantą, visas

adaptavimo procesas, veiklos ir pastebėjimai gali būti dokumentuojami, fiksuojant kiekvieną žingsnį. Gali būti renkami studentų atsiliepimai.

- 4.4 Pagal nutrūkusio adaptavimo variantą, pasirengimo adaptavimui etape yra sumodeliuojama studijų dalyko ar modulio vizija diegiant ISM. ISM yra įkomponuojamas ir pabandoma išsivaizduoti, kaip atrodytų paskaitos, jas vedant inovatyviu studijų metodu. Tuomet yra išskiriami tam tikri paskaitos elementai ir numatoma, ką reikės adaptuoti ir pritaikyti. Po to dėstytojai adaptuoja ir pritaiko studentams teikiamas užduotis ir veiklas, atitinkamai keičia vertinimo sistemą. Šiuo atveju metodas nulemia tam tikrus studijų dalyko ar modulio tikslo ir uždavinių pakeitimus. ISM bandomas tik pristatant užduotį, paskaitos, ciklo metu. Jam nepavykus, adaptavimas nutrūksta, jis nėra bandomas adaptuoti dar kartą.

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