KAUNAS UNIVERSITY OF TECHNOLOGY

ROBERT LEŠČINSKIJ

FACTORS INFLUENCING THE DEVELOPMENT OF UNIVERSITY STUDENTS' ORGANIZATIONAL LEARNING CAPABILITY THROUGH FORMAL, NON-FORMAL AND INFORMAL LEARNING

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UNIVERSITETO STUDENTŲ ORGANIZACINIO MOKYMOSI GEBĖJIMĄ PLĖTOJANTYS FORMALIOJO, NEFORMALIOJO IR INFORMALIOJO MOKYMOSI VEIKSNIAI

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APEL – Accreditation of Prior Experiential Learning
APL – Accreditation of Prior Learning
HE – Higher Education
ILO – Intended Learning Outcome
KM – Knowledge Management
KW – Knowledge Work
OL – Organizational Learning

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Definitions of Key Terms

Capability – integration of confidence in one's knowledge, skills, self-esteem, and values. Due to its tacit nature, capability is difficult to measure. Capable people have confidence in their ability to take effective and appropriate action, explain what they are about, live and work effectively with others, and continue to learn from their experiences as individuals and in association with others, in a diverse and changing society (Stephenson, 2007).

Educational environments – refer to dynamic informational spaces that are deliberately created and controlled by an educator and influenced by such parameters as educational aims, content, methods and aids, also objects and people in the same environment that somehow affect the learner, educational information, and the ways learner perceives it (Jucevičienė et al., 2010).

Explicit knowledge – knowledge that has been articulated and, as a rule, captured in some medium, e.g. text, tables, diagrams, and other (Nickols, 2000).

Formal learning – learning which occurs in organized and structured environments. It has a specifically dedicated learning space and offers support for learners; it is also characterized by learning objectives that are directed at a specific group of learners and must be accomplished within a certain time limit. It leads to qualification (a diploma) and is intentionally pursued by the learner (Bohlinger, Dang, & Klatt, 2016, Tudor, 2013; Smith, 2002).

Implicit knowledge – knowledge that can be expressed but is not yet explicit (Davies, 2015).

Incidental learning – or accidental learning (Matheson, 2003), or unintentional learning is learning as a by-product of another activity (Marsick & Watkins, 2015). The learning is "the fruit of circumstances which contrive and combine to provoke an unexpected learning turn" (Matheson, 2003, p. 1).

Informal learning – predominantly experiential and non-institutional learning that is not based in a deliberately designed setting, e.g. self-directed learning, networking, coaching, mentoring, performance planning, and trial-and-error (Marsick & Watkins, 2015).

Non-formal learning – planned activities which are also characterised by the learning objective and a specific amount of time given to achieve this objective. It does not necessarily take place in a setting that is specifically dedicated to learning nor does it have to necessarily lead to a certificate (though in many cases it does). It is still an intentional activity from the learner's point of view, and it involves various ways of supporting the learners in their endeavours (Bohlinger et al., 2016; Tudor, 2013; Smith, 2002).

Organizational learning – learning which enables creation of knowledge relevant to achieving the organization's goals (Chiva, Ghauri, & Alegre, 2014, p. 689) on individual or collective group and organization levels (Jucevičienė, 2007).

SECI Knowledge Creation Model – a model proposed by Nonaka and Takeuchi (1995) that describes how organizations create knowledge. The model consists of four modes of knowledge conversion: socialization (tacit to tacit), externalization (tacit to explicit), combination (explicit to explicit), and internalization (explicit to tacit).

Tacit Knowledge – knowledge that is not expressed, intuitive, and non-verbal. It is acquired with little or no environmental support and is procedural and useful in practice (Polanyi, 1966; Sternberg, 1995).

Organization – a social unit of people that is structured and managed to meet a need or to pursue collective goals. All organizations have a management structure that determines relationships between different activities and members, and subdivides and assigns roles, responsibilities, and authority to carry out different tasks. Organizations are open systems; they affect and are affected by their environment (Online Business Dictionary, available on www.businessdictionary.com).

Team – teams are composed of two or more individuals who exist to perform organizationally relevant tasks, share one or more common goals, interact socially, exhibit task interdependencies, maintain and manage boundaries, and are embedded in an organizational context that sets boundaries, constrains the team, and influences exchanges with other units (teams) in the broader entity (Kozlowski & Bell, 2012).

Abstract

The transition from traditional models of the economy to the knowledge-based economy has had a significant impact on the growth of interest in the problems of knowledge management and, as a result, organizational learning (OL) (Nonaka & Takeuchi, 1995; Vera & Crossan, 2003a). These changes have also resulted in severe challenges for higher education institutions which more than ever need to educate specialists who can work in organizations that rely on developing and implementing innovations. Seeing how education is inseparable from the country's (or even region's) social, cultural, and economic realities, such challenges must be addressed appropriately. The knowledge-based organizations that operate in the emerged knowledge economy rely on their ability to process and, more importantly, create knowledge (Nonaka, 1994), which means an almost unavoidable increase in demand for employees capable of OL.

Organizational learning has been previously investigated in the context of higher education institutions (Oh & van der Hoek, 2001; Mai, Kramer, & Luebbert, 2005; Bensimon, 2005; Veisi, 2010; Edintaitė, 2013; Jucevičienė & Valinevičienė, 2014, etc.). However, there is still a gap in knowledge concerning the possibilities of systematically developing students' OL capability in formal, non-formal, and informal learning. No studies have been conducted to determine the factors that impact the development of students' OL capability while studying at the university. Thus, the research problem, which requires investigation, is formulated as the following research question, **"What factors and how do they influence the development of the university students' organizational learning capability through formal, non-formal and informal learning?"** The current study **aims** to look at these factors from a systematic point of view, i.e. considering formal, non-formal, and informal learning.

Research object: factors influencing the development of the university students' organizational learning capability.

Research aim: to determine factors and the peculiarities of how these factors influence the development of university students' organizational learning capability.

Research objectives:

1. To provide rationale for the factors influencing development of the university students' organizational learning capability;
2. To substantiate the empirical research methodology for investigating factors influencing the development of university students' organizational learning capability;
3. To empirically investigate how factors influencing the development of university students' organizational learning capability are manifested in formal, non-formal, and informal learning.

The research described in the dissertation was based on the following **conceptual premises**: the concepts of *Lifelong and Lifewide Learning* (Longworth, 2000; Jackson, 2011), the concept of *Organizational Learning* (Nonaka, 2000), the

concept of *capability* (Stephenson, 2007), *the theory of educational environments* (Jucevičienė et al., 2010), *Sociocultural constructivism* (Vygotsky, 1986).

Structure of the dissertation

The dissertation starts with an introduction that presents the background to the problem, introduces the research significance for this study and the problem statement as well as the purpose of the study, conceptual framework, research methodology, significance of the study, definitions of the key terms, and the organization of the study. The first part presents the review of scholarly literature which is used to determine the factors influencing the development of students' OL capability. The second part discusses the empirical research methodology which includes data collection methods, data analysis procedures, methods applied, and trustworthiness of the study. The third part presents results of the pilot study aimed at investigating the possibilities that students have to develop their OL capability at the selected top ten business and management schools in Europe, and the empirical investigation into how students experience the factors substantiated in the first part. The results are presented separately for both cases followed by a cross-case analysis of findings. The work ends with a discussion followed by conclusions and recommendations.

Novelty of the research results and practical significance

The meaning of the organizational learning capability as a human quality has been substantiated. The list of factors for the development of students' OL through formal, non-formal, and informal learning has been substantiated. It has been shown that if these environments are formed spontaneously without actualizing them by learning aims or learning outcomes, the emerged personal learning environments that affect students' learning may remain unperceived (in the "tacit" state) along with the knowledge acquired/developed as a result of the influence of these environments ("tacit" knowledge). The necessity and possibilities for the OL capability development by the integration of formal, non-formal, and informal learning have been proved, pointing out to the system of the Accreditation of Prior Learning, particularly the Accreditation of Prior Experiential Learning. The peculiarities of the substantiated factors revealed how these factors influence the development of students' OL capability through formal, non-formal, and informal learning and could serve as a guide for higher education managers and the faculty to make sure that the university utilizes all the possibilities to develop students' OL capability.

INTRODUCTION

Research novelty and research problem

The last few decades have witnessed a global shift in the social-economic context brought by technological and scientific progress that continue to transform and transition traditional models of the global economy to what we call the knowledge-based economy. Both commercial and government organizations increasingly depend on generating and disseminating knowledge among their constituents to spur the development and implementation of innovations. This is particularly the case for developed economies. Unsurprisingly, on the brink on what many refer to as the fourth industrial revolution, knowledge has become an indispensable resource for organizations striving to maintain their competitive edge over business rivals. Noteworthy in this respect are strong efforts made by the developing and so-called latecomer economies, such as Lithuania, that continue to build their knowledge sectors.

The shift to the knowledge-based economy has also stimulated an increased the interest among researchers in areas of knowledge management resulting in significant contributions to the creation, acquisition, and distribution of knowledge (Nonaka & Takeuchi 1995; Vera & Crossan 2003a; Vera & Crossan 2003b; Jucevičienė 2007; Jucevičienė & Mozuriūnienė 2009).

The knowledge-based economy has changed not only the way organizations operate but also prompted a dramatic shift in the very perception of what is considered to be a successful organization. Lundvall and Nielsen (2003) comment on this shift noting that the ever-growing significance of learning may be responsible for the increasing polarisation in Europe's labour markets. Thus, stability, previously perceived as strength, could now be seen as a sign of weakness. Responding effectively to the rapidly changing environment means that organizations must adapt, i.e., be open and able to learn (Martin, 1999). However, some scholars argue that an organization per se cannot learn but rather its members are engaged in learning (Cannon & Edmondson, 2005; Harrison 2005; Jucevičienė 2007).

Knowledge-based companies often employ individuals who are responsible for the creation and internal dissemination of knowledge. Nonaka and Konno (1998) refer to them as "knowledge officers". Thus, it would appear that companies willing to hire "knowledge managers" are more likely to be interested in developing such competence in their employees or potential employees, i.e. today's students. This is a compelling reason why the university curricula must meet this challenge.

Education is highly dependent on its various social, cultural, and economic contexts. Thus, the shift to knowledge-based economy presents educational systems with new challenges. Since knowledge-based organizations rely on their ability to process and, more importantly, create knowledge (Nonaka, 1994), they require employees to engage successfully in organizational learning (OL) which is one of the central features of the knowledge-based organizations. Some of the recognized global trends would seem to highlight the importance of skills necessary for success in the careers of the twenty-first century, many of which we are yet to see. This has resulted

in the emergence of numerous frameworks, such as Assessment & Teaching of 21st Century Skills' (ATC21S), Framework for twenty-first century learning, and Partnership for 21st-century skills (P21 Skills). The aforementioned often include communication, creativity, innovation, collaboration, information, and communication technology literacy, critical thinking, and problem-solving skills (Häkkinen et al., 2017). For a learning organization, however, OL is a skill (Elkjaer, 2004; Lau, Lee, & Chung, 2019) or rather a capability (cf. DiBella, Nevis, & Gould, 2006; Wu & Chen, 2014;) that is equally important, if not more so. In many ways, the OL capability also encompasses some of the skills enumerated by Häkkinen et al. (2017).

Multiple definitions explaining organizational learning can be found in scholarly literature. Huber (1991), for instance, describes OL as a complex process referring to the development of new knowledge potentials for applying organizational behaviour. Murray and Donegan (2003) describe OL as a process that includes the application of individual and organizational behaviour for the development of organizational knowledge. Castaneda and Rios (2007) define OL as a process based on individuals' learning in private and public organizations engaged in creating and obtaining knowledge for the purpose of institutionalizing it in order to adapt as an organization to the changing conditions of the environment or to change the environment proactively, depending on its level of development (Castaneda & Rios, 2007; Castaneda, Manrique, & Cuellar, 2018).

Organizational learning is a relatively new phenomenon and has attracted the attention of numerous scholars from the disciplines of education and knowledge management. Scholars in the field of knowledge management have investigated the influence of corporate culture on OL (Joseph & Dai, 2009; Cook & Yanow, 2011). Researchers have also examined OL for the psychological empowerment of employees (Joo & Shim, 2010; Dust, Resick, & Mawritz, 2014).

Furthermore, organizational learning has been investigated in the context of higher education (HE) institutions. Oh and van der Hoek (2001) studied the impact of simulating learning processes on individual and organizational learning. Mai, Kramer, and Luebbert (2005) researched how partnerships, especially those involving universities and community organizations, could gain the best advantage from the learning potential to a partnership. Bensimon (2005) drew upon the theory and process of organizational learning to make a case for how to understand and deal with cultural and structural obstacles that deter HE institutions from creating the desired learning outcomes for students. Veisi (2010) conducted a case study to investigate the level of the student's exposure to organizational learning in a particular study programme. In her doctoral thesis, Edintaitė (2013) focused on the significance of organizational knowledge created at academic departments regarding the learning of university teachers. Jucevičienė and Valinevičienė (2014) examined the impact of educational environments on the student's OL.

However, there is still a lack of research into the possibilities of systematically developing the OL capability of university students through formal, non-formal, and informal learning. To date, no study has been conducted to determine the factors

facilitating the development of the OL capability of the students both on and off campus. Therefore, the research problem, which requires investigation, is formulated as the following research question, **"What factors and how do they influence the development of the university students' organizational learning capability in formal, non-formal, and informal learning?"** The current study aims to look at these factors from a systematic point of view, i.e. considering formal, non-formal, and informal learning.

Research object: factors influencing the development of the university students' organizational learning capability.

Research aim: to determine factors and the peculiarities of how these factors influence the development of the university students' organizational learning capability.

Research objectives:

1. To provide a rationale for factors of the development of the university students' organizational learning capability;
2. To substantiate the methodology for empirical research in order to investigate factors influencing the development of the university students' organizational learning capability;
3. To empirically investigate how factors influencing the development of the university students' organizational learning capability are manifested in formal, non-formal, and informal learning.

Research methodology: the research was built upon the following **theoretical frameworks:**

- The concepts of *Lifelong and Lifewide Learning*, which advocate holistic approach to learning (Longworth, 2000; Jackson, 2011). Considering the prominence of Lifelong and Lifewide learning, the university expands its possibilities beyond formal learning, thus creating a system of recognition of prior learning (Barnett, 2007).
- The concept of *Organizational Learning*, which states that organizations themselves do not learn, but their individual members do; organizations only create the necessary conditions for OL. For the OL to take place, people have to perceive themselves as members of the organization who pursue organizational goals (Nonaka et al., 2010).
- The concept of capability as it is described by Stephenson (2007): Capability is an integration of confidence in one's knowledge, skills, self-esteem, and values. It is easier to recognize it than to measure it with any precision. Capable people have confidence in their ability to take effective and appropriate action, explain what they are about, live and work effectively with others, and continue to learn from their experiences as individuals and in association with others, in a diverse and changing society.
- The theory of educational and learning environments (Jucevičienė, 2007, 2010, 2013), which highlights the differences between what has been formally

planned as a curriculum, what is actually implemented by creating a chain of the educational environments, what has an impact on a student through non-formal and informal learning in potential learning environments and what is adopted by a student, constituting personal learning environments.

• *Sociocultural constructivism* – cognition is of sociocultural origins, learning processes are inseparable from contexts (Vygotsky, 1986).

• *Self-directed learning* – a learning process wherein the learner according to his/her own learning needs formulates aims of learning, identifies the resources necessary for learning, chooses appropriate learning strategies, and assesses his/her learning outcomes (Knowles, 1975).

Logical structure of the research consists of three main stages and is presented in Figure 1 below:

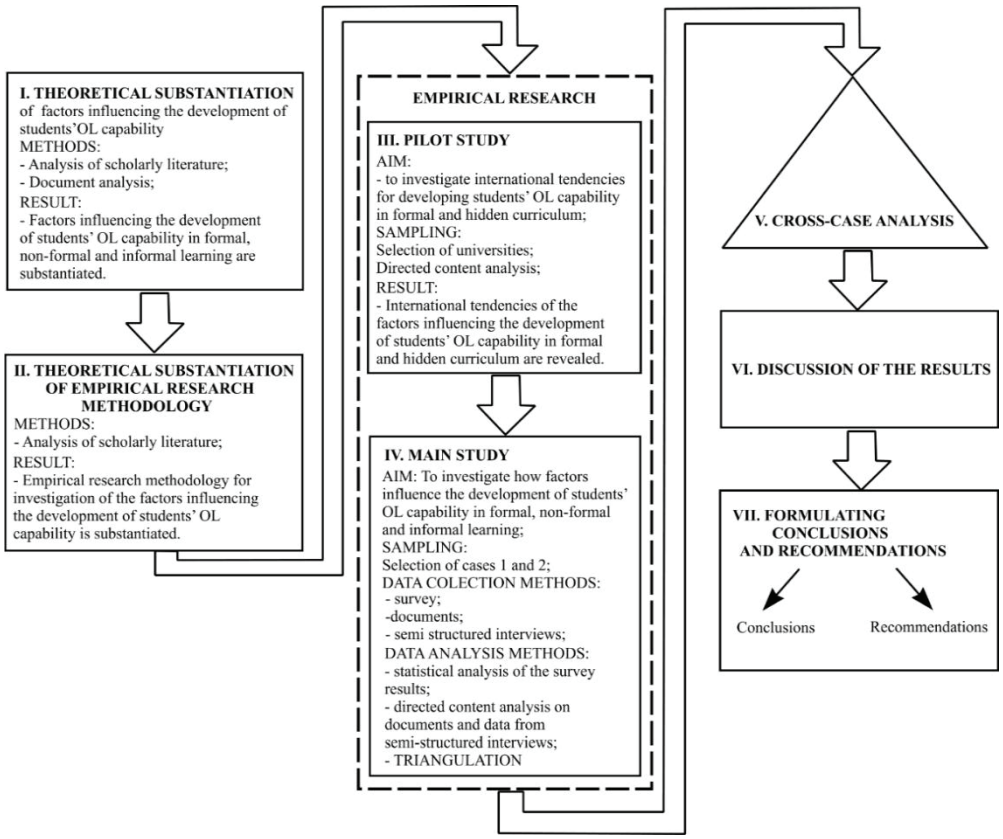

Figure 1. Logical structure of the dissertation

Methodological framework of the empirical research

Empirical research strategy: the case study was selected as the empirical research strategy in this dissertation. As a rule, case studies are not limited to either qualitative or quantitative evidence solely and may involve mixed evidence (Yin, 2014).

Empirical research design: before conducting the main study, the pilot study has been conducted to determine the existing possibilities for students to develop the OL capability in internationally recognized universities. The universities which delivered study programs with the highest chance of having OL related aims have been selected. The pilot study relied on the document analysis (websites, prospects) of the top European business schools according to QS rankings. This study allowed looking at possibilities students have to develop the OL capability both within and outside the formal curriculum. The findings confirmed the initial assumption that the possibilities to develop the OL capability through non-formal and informal learning deserved special attention.

The multiple case study has been conducted as the main research. Two cases were investigated in this dissertation: (a) the case of information technologies students and (b) the case of business management students. The research was narrowed down to students studying in management and IT programs since curricula may include simulated organizations, a kind of educational environments where OL takes place, and also because these programs educated future professionals for the knowledge-based organizations (e.g. IT). Both cases shared similar context: students studying in the selected study programs study at the same university and all of them were third- and fourth-year students who have already had their internships. One of the best universities in Lithuania (based on QS rankings) was selected for the research. The following methods were used: the document analysis (study programs' websites, course descriptions, etc.), a written survey of students from two faculties (306 in total), students were invited to semi-structured interviews. Thirteen students answered to the call: seven from the study programs investigated in Case 1 and six from the study programs investigated in Case 2. In addition, a facilitator for non-traditional internships that students had a chance to do in Case 1 and members of the teaching staff who delivered courses that were recognized by students as involving OL were also interviewed.

Ethical considerations

All necessary ethical guidelines were taken into consideration. The author of the dissertation informed the surveyed students of the purpose and the methods of the research. The author observed the main ethical principles (also known as Helsinki Principles) which ensure confidentiality and privacy of those participating in the research. The researcher communicated the benefits of the research, which gave respondents a sense of involvement (Cohen, Manion, & Morrison, 2002). The survey did not require respondents to provide their names. Instead, students had to create unique codes known only to them. Participation in the interviews was voluntary. The informants selected for the interviews were informed of the purpose and methods of

the research. As faculty members at the investigated university were also interviewed, respect for their privacy and confidentiality was maintained.

Scientific novelty and theoretical relevance

The concept of the organizational learning capability as a human quality has been substantiated. The list of the factors for the development of the students' OL through formal, non-formal, and informal learning has been substantiated. The peculiarities in the manifestation of these factors in the selected cases in particular fields of the study have been revealed. The possibility for integration of formal, non-formal, and informal learning for the development of students' OL capability through the implementation of the agile approach to the curriculum and a system for Accreditation of Prior Learning (APL), particularly its subsystem oriented towards accreditation of prior experiential learning (APEL).

It has been shown that if these environments are formed spontaneously without actualizing them by learning aims or learning outcomes, the emerged personal learning environments that affect students' learning may remain unperceived (in the "tacit" state), along with the knowledge acquired/developed as a result of the influence of these environments ("tacit" knowledge).

The investigation of the study programmes in the cases at the investigated university in Lithuania as well as the internationally recognized universities revealed that factors of the OL capability development have more room for manifestation in informal rather than formal learning. Therefore, universities do not devote enough attention to the development of the OL capability when developing and implementing study programmes. It has been noticed that knowledge creation is limited to the group level in the investigated study programmes.

Practical significance

The peculiarities of the substantiated factors revealed how these factors influence the development of students' OL capability through formal, non-formal, and informal learning and could serve as a guide for HE managers and the faculty to make sure that the university utilizes all the possibilities to develop students' OL capability.

Structure of the dissertation

Introduction starts with the presentation of the background to the investigated problem and formulation of the research question as well as objectives of the study, a conceptual framework, a brief outline of the employed research strategy, its scientific and practical significance, definitions of the key terms, and the outline of the structure.

The review of literature is presented in Part 1 and serves as a rationale for determining the factors that influence students' OL capability. Research methodology, data collection and principles of the analysis as well as reliability and ethical concerns are addressed in Part 2. Part 3 presents the empirical investigation of the factors influencing students' OL capability through formal, non-formal, and informal learning. The dissertation ends with the presentation of conclusions, discussion of results, recommendations for further research, and the summary in Lithuanian. The dissertation consists of 235 pages, contains six figures and 64 tables.

1. THEORETICAL SUBSTANTIATION OF FACTORS OF THE DEVELOPMENT OF UNIVERSITY STUDENTS' ORGANIZATIONAL LEARNING CAPABILITY

The current chapter presents an overview of scholarly literature concerned with organizational learning (OL), organizational learning capability, OL in particular, that university students are likely to be involved in through their studies at the university in formal, non-formal, and informal learning activities. First, the relevance of OL to students is explained by discussing the challenges they are to face as young professionals operating in the knowledge economy. Students' OL is discussed in the context of educational and learning environments which are also introduced in the chapter.

1.1. University students' OL capability development through formal, non-formal, and informal learning

As mentioned in the introduction, organizational learning is concerned with knowledge creation for organizational purposes. While learning generally takes place on an individual level, individual knowledge is later combined on two collective levels: group and organization. It is also essential to remember that OL takes place within an organization. Traditional university studies do not always incorporate didactic systems which involve real organizations into the learning process. Thus, for students to be able to practice organizational learning as a part of their formal learning, they either have to look for such possibilities outside the university walls (e.g., during internships) or expect them to be simulated as a part of the course. These possibilities are thoroughly discussed in further sections.

It is possible to differentiate between formal, non-formal, and informal learning. Organizational learning is not learning in its traditional sense. Thus, it would be interesting to see whether students can develop the OL capability in these various settings, just like they would develop other skills or capability while studying. In non-formal and informal learning, students can utilize various possibilities for learning arising from their personal lives and the university activities alike. A university, as an establishment, incorporates many smaller organizations that allow students to participate in various activities, such as sports clubs, art societies, student organizations, student representation, and other similar organizations. Students involved in the activities of these organizations can experience organizational learning in, at least, two ways: by performing organizational activities/functions within these organizations or by engaging in the target activities (cf. sports in sports clubs, singing in the choir). The importance of organizational learning for the contemporary knowledge economy makes it necessary to investigate all of the possibilities to develop students' OL capability mentioned above.

1.1.1. University students as future knowledge professionals

University graduates facing the challenges of the knowledge economy

Education is inseparable from the social and economic context of the country. Therefore, in order to understand the relevance of OL for the university students (future or even present employees), it is essential to discuss the context in which they are expected to work upon graduation. The rise of the knowledge society and the knowledge economy (Drucker, 1969) leaves one crucial question, "What is this labour market that the university is expected to produce the workforce for?" Hence, it is essential to investigate the concept of the knowledge economy and the implications this new economy has for HE as such. The term Knowledge Economy (KE) is often used when discussing economies where the central role of knowledge and innovation in economic growth is widely recognized, as a rule, these are the developed economies (WB, 2007). Peters (2010) claims that it is possible to distinguish between at least three types of knowledge economies: the learning economy, the creative economy, and the open knowledge economy.

In this case, the idea of the learning economy is based on the works of Lundvall (1994, 2003), a Swedish economist, who uses the term to talk about a new landscape for the European innovation policy. Peters (2010) argues that both the notion and the theoretical background for learning economy is "refinement of the "knowledge economy." The concept is based on the way a set of interlocking forces (ecologies) in information/knowledge intensities, distributed new social media, and more extensive computer networking and connectivity have contributed to the heightened significance of human capital formations, mode of social production and an emphasis on learning processes" (Peters, 2010, p. 3). What Lundvall (1994, 2003) and, subsequently, Peters (2010) particularly stress is that it is the capacity to learn that defines the success of individuals, firms, and national systems. Peters (2020) argues that what this means for the national context is that the organizational learning is now realized as a phenomenon of vital importance, but at the same time it is not easy to transfer this assumption to a formal education institution.

The creative economy is described as emphasizing the creative industries and institutions, which are now seen as an interlocking sector producing cultural goods and services, a vital component of the new global knowledge economy (Peters, 2010). Knowledge Economy is referred to by Peters (2010, p. 11) as concerning a range of initiatives and movements, including Free and Open Source Software, Open Access and Wikipedia that question the "neoliberal assumptions within the global network information economy". The fact is that self-interest is no longer a sufficient reason for the active engagement of millions of millions of people around the world contributing to these projects without monetary reward.

It seems that no matter what model of the knowledge economy or what sector within the knowledge economy students are being educated for, they are expected to be able to search for the required knowledge, efficiently share it with their colleagues, create knowledge, and participate in various networking activities rather actively. The new knowledge economy requires employees to be capable of handling various types of knowledge work in knowledge-based organizations.

The knowledge-based organization, knowledge work and knowledge worker

The world is on the brink of yet another, the fourth, some would argue, industrial revolution. The term "revolution" implies the unprecedented pace and magnitude of changes coming about. These changes are likely to cause shifts in power, shifts in wealth, and knowledge. Organizations are more than ever likely to make a step towards becoming learning organizations. Hence, today's students and tomorrow's graduates are likely to be involved in organizations that rely on creating and disseminating knowledge.

It would seem that researchers perceive the contemporary organizations in two different ways: as knowledge-based organizations (KO) that are fundamentally different from the bureaucratic organizations described by Weber (Bennet & Bennet, 2004), or by stressing the organizational activities of knowledge workers (KW) (Kelloway & Barling, 2000). In both cases, a great deal of discussion arises while investigating the relationship between KO and KW. The KO as such emerged due to "recognition of the difficulty of dealing with complexity and with ever-increasing competition spurred by technology and the demands of sophisticated customers" (Bennet & Bennet, 2004). The following thinking and activities are emphasized by researchers investigating KOs (Ruggles, 1998; Bennet & Bennet, 2004):

- The organization perceives itself as a knowledge-based organization: each activity within the value chain is considered as a potential knowledge enrichment act; knowledge and learning (as means of creating knowledge) are perceived as primary criteria;
- Recognizes knowledge as its strategic resource;
- It employs the following knowledge management activities; determines what knowledge is available and what knowledge is required; acquires it, generates knowledge, collects, disseminates, shares, uses knowledge;
- Creates the following preconditions for the implementation of KM activities:
  - cultural – tolerates risk, trusts their employees and their ability to create knowledge; such organizations foster informal relationships;
  - managerial – managers are competent in KM and possess the traits of active leaders who ensure all the necessary preconditions for knowledge management activities;
  - organizational – horizontal and flexible organizational structure is formed; work is organized in multidisciplinary teams; non-formal communities of practice and external social networks are promoted; infrastructure that allows supporting knowledge management activities is employed.

The above reflects the image of an ideal KO that may or may not be achievable, i.e., only a part of the KM activities may be implemented. Therefore, the question "What level of knowledge management has to be achieved in an organization for it to be a knowledge-based organization?" is of particular interest to the researchers. To answer this question, a systematic approach to knowledge management is adopted. Such an approach allows researchers to design knowledge management systems models.

Šajeva's (2010) knowledge management system, which the author defines by four levels of maturity, can be mentioned as one of the most successful models. These levels of maturity are differentiated according to the development level of three components of the system: (a) the knowledge management process (knowledge identification, acquisition, creation, retention, dissemination, application); (b) technological context (technological infrastructure); (c) social context: strategic leadership, knowledge culture, organizational infrastructure, and organizational learning. Social and technological contexts constitute the socio-technological environment. It depends on the organizational context, i.e., how much is it created, empowered in the organizational sense.

"0" level is a characteristic of the KM system if the organization does not recognize the need for knowledge management and there are no organizational conditions for the knowledge management. "1" level is a characteristic of the KM system where individual knowledge management activities are implemented in a chaotic way and the organizational context develops chaotically as well. "2" level is a characteristic of organizations that start practicing knowledge management officially and the organizational conditions necessary for knowledge management are created, even if in a fragmented way. "3" level is achieved when a full knowledge management process is implemented and the coordination of conditions suitable for knowledge management is fully controlled. The knowledge management system reaches the highest "4" level when not only the full knowledge management process takes place, but it is continuously revised and favourable organizational conditions for knowledge management are developed proactively (Šajeva, 2010).

Regardless of the created organizational activities, the success of the knowledge organization is determined by people, mainly by their specialized knowledge applied in the place and at the right time.

While investigating the activities of workers related to knowledge, researchers have raised a question, "Who should be regarded as a knowledge worker?" Is it a person employed into a particular position related to knowledge management? Alternatively, is it any other employee whose job activities involve knowledge work? Alternatively, is it an employee who adopts specific functions of knowledge work on his/her initiative, although they are not included in the job description?

Papers which hold a positive response to all three last questions can be found. However, particularly much attention is devoted to the KW as a profession related to KM. As noted by May, Korczynski, and Frenkel (2002), some research papers are devoted to the relationships between expertise and the worker. Reinhardt et al. (2011) analysed the roles and activities of KWs. According to these authors, the following roles of KWs can be discovered in all the organizations involved in knowledge activities: "controller, helper, learner, linker, networker, organizer, retriever, sharer, solver, and tracker" (Reinhardt et al., 2011, p. 172). They perform varied knowledge activities, for example, identify knowledge/information within the organization and beyond its walls, acquire knowledge and help the others acquire it, capture the knowledge significant for the organization, retain it, and keep the knowledge within the organization, create knowledge, develop, share, disseminate, and use it.

However, certain authors adopted a different approach towards knowledge work. Kelloway and Barling (2000) refused to investigate the employee's obligation to be or not to be a knowledge worker. The authors suggested investigating the knowledge work instead, which "is understood to comprise the creation of knowledge, the application of knowledge, the transmission of knowledge, and the acquisition of knowledge. Each of these activities is seen as a discretionary behaviour" (Kelloway & Barling, 2000, p. 287). The authors claim that "knowledge work is best understood, not as an occupation, but as a dimension of work" (Kelloway & Barling, 2000, p. 290). According to these authors, such KnW can be characteristic of all employees, regardless of their education or position within the organization: "the (a) ability, (b) motivation, and (c) opportunity to do so" (Kelloway & Barling, 2000, p. 287).

The question still arises whether it is possible to enable students to learn knowledge work at the university or is it something they have to learn as they start working in organizations? To answer this question, research was conducted by Jucevičienė and Leščinskij (2018). The research revealed that employees assume various knowledge work activities within their organizations and can learn these activities through practice, i.e., in the spirit of learning-by-doing. However, it was also observed that having had a course on knowledge management gave students a better understanding of what knowledge work and organizational learning is, as a result, allowing them to assume more KW functions. Therefore, an assumption can be made that if students can engage in knowledge work activities, particularly in organizational learning, while studying at the university, they will be even more efficient at knowledge work in their organizations.

The main conclusion of the chapter is that current students are likely to work in knowledge-based organizations. It implies unavoidable knowledge work. Depending on the maturity level of the knowledge management system, this work can be supported by the management and even outlined in the job description or voluntarily undertaken by employees. This also points to the necessity to introduce knowledge work to students as early as their university course.

1.1.2. The essence of organizational learning and OL capability

It is impossible to start the discussion on the organizational learning without looking closer into the very notion of learning. In this section, the learning theories that are used to substantiate learning in this dissertation are being discussed.

Learning as a social phenomenon. Due to its paramount role for any given field of scholarship, the concept of learning might be difficult to define precisely. Marton and Booth (1997) cited in Fry et al. (2009) state that learning is about how people perceive and understand the world, about making meaning. In this dissertation, the author agrees with the former view as well as the view of Driscoll (2004) who summarised the discussion on learning theories to point out the features that all of these theories similarly display. The author explained that learning could be seen as a persistent change in human performance or performance potential that is the result of the learners' experience and interaction with the world (Driscoll, 2004, p. 11).

At least several major learning theories have contributed to shaping the ideas presented in this dissertation. Constructivist learning theories assume that learners

themselves construct their experiential knowledge (Piaget, 1929). Depending on the schools of thought, it is reasonable to distinguish several trends in the constructivist theory. The cognitive-constructivist approach (Piaget, 1929), for instance, explains that an individual constructs knowledge by exploring the environment through activities.

The author of this dissertation recognizes the multitude of approaches to learning; however, sociocultural constructivism and social learning theory are particularly important for the context of this dissertation. ***Sociocultural constructivism,*** best known for Vygotsky's (1946) and later Leontjev's (1981) contributions, explains that the nature of learning is sociocultural. Both Vygotsky (1946) and Leontjev (1981) as well as Dewey (1986) question the idea of knowledge transfer or sharing. One cannot merely pass the knowledge as a physical object to another person; instead, knowledge is socially constructed through communication and interaction. Thus, the truth is constructed by individuals and is, therefore, manifold. Particularly valuable for this dissertation is the idea that learning can occur through interaction with the more knowledgeable other (Vygotsky, 1976). For instance, a student performing a task during an internship can learn from more experienced employees of the company. Sahlberg (2005) also stressed the importance of communication, as it is through discussions, deliberations, and arguments that learners construct their knowledge.

Another approach to learning that has heavily influenced the author of this dissertation is the ***Social Learning Theory***. The criticism of the behaviourist approach to learning, prominent in the early and mid-20th century, led to the development of this theory (see Bandura, 1971). Jarvis, Holford, and Griffin (2004) characterize learning as having three social dimensions: the social aim of learning, the social structure of learning, and social relations realized while learning. The social learning theory is sometimes explained as an individual's adaptation within society. Consider this: a learner can learn various forms of behaviour through his/her experience or by observing behaviour of others. The ever-present social relationship between the man and the environment means that anyone and/or anything can serve as a learning model, be it a person, book, a movie, etc.

For the purpose of this dissertation, we shall think of learning as a social phenomenon where individuals construct their knowledge through communication with others and interaction with the environment, where the learning process itself is characterised by the social aim of learning, the social structure of learning, and social relations realized while learning.

Naturally, the role of other individuals for the learning process is paramount. The learner can learn various behaviour models through either observing others or through his/her own experience in various social settings. One of such settings is an organization. A common definition of the term in works of researchers investigating organizational behaviour is that of a "structured social system consisting of groups and individuals working together to meet some agreed-on objectives" (Greenberg & Baron, 1995, p. 11). To achieve these objectives, contemporary organizations (or

rather people in them) have to be able to innovate. Innovation is based on the creation of organizational knowledge which requires organizational learning.

Before the rise of the knowledge society, knowledge was a commodity produced almost exceptionally by the university. However, as noted by Barnett (2000), the emergence of the knowledge society, which by definition produces knowledge, has shifted the long-standing status quo in this field. Suddenly, organizations have prioritized the development of corporate epistemologies to drive the development of innovations within them (von Krogh, 1996).

According to Argyris (1977, 2002), organizational learning, in brief, is a process of detecting and correcting error. Interestingly, in this case, an error is considered to be any feature of knowledge or knowing that inhibits learning (Argyris, 2002). Hence, organizations realize that generating and transferring organizational knowledge into organization's practice can give them the much-needed advantage over their competition, especially considering that employees in organizations age and are eventually replaced by new employees who are expected to participate in the development of organizational knowledge. Organizational knowledge is created through organizational learning. However, to understand organizational learning, it is necessary to investigate the very concept of knowledge.

Concepts of *knowledge*

Due to different philosophical approaches to knowledge, defining the concept presents more difficulties than one would expect. As pointed out by Lehrer (2018, p. xii): "All agree that knowledge is valuable, but agreement about knowledge tends to end there". Positivists claim that "genuine knowledge is based on sense experience and can be advanced only using observation and experiment" (Beck, 1979, cited in Cohen et al., 2002). Such an approach, though seemingly extremely rigorous, has the right to exist. However, this does not mean that the interpretivist approach, which is widely used in social sciences, as it allows interpreting data acquired as a result of qualitative research, is less significant. In fact, different scientific problems require a different approach. From the perspective of the critical theory, knowledge is considered to be information that is correct (Lehrer, 2018). Such a philosophical approach is interesting, though from the perspective of knowledge management may not hold its ground, as in knowledge management researchers seem to think of knowledge as three things: first, we use it to refer to a state of knowing. Second, the word knowledge is used to speak about an understanding or grasp of facts, methods, principles, and techniques relevant for one's activities, what Nickols (2000) refers to as "know how" and Senge (2006) as "the capacity for action". Third, the term "knowledge" is used in reference to codified, captured and accumulated facts, methods, principles, techniques, and so forth. The third definition of knowledge incorporates the notion of data and information as distinguished by Davenport and Prusak (1998).

Central to the ideas in this dissertation is the idea of creating organizational knowledge via the conversion of tacit and explicit knowledge. As far as the classification of knowledge goes, the distinction between the tacit and explicit

knowledge made by Polanyi (1966) is particularly relevant to organizational learning. Polanyi (1966) classifies knowledge as follows:

- *Tacit* – knowledge that is not expressed, intuitive, non-verbal (as stated by Polanyi, "we may now more than we can tell";
- *Explicit* – knowledge that is expressed in speaking or writing (Dummett, 1991; Polanyi, 1966).
- Researchers also distinguish *implicit* knowledge that is knowledge that can be expressed but is not yet explicit (Davies, 2015).

Horvath (2000) made a distinction between knowledge that is *embodied* in people (individuals, groups, teams, communities) and that *embedded* in processes, organizational culture, routines, etc.

Nickols (2000) explains explicit knowledge, as that, which has been articulated and, more often than not, captured in some medium, e.g. text, tables, diagrams, etc. Nonaka (1991) explains that such knowledge is *formal* and *systematic*. Such knowledge, according to Mooradian (2005), is easier to identify and use, but it represents only a fraction of the organization's knowledge pool. As most of the knowledge we use for, be it procedural or other more complex activities, is not actually articulated by the knowledge users.

In order to spread knowledge throughout the organization or spur greater innovation, organizations face the challenge of capturing tacit knowledge and making it explicit (Takala, 2008). Sternberg (1995) suggested a definition of tacit knowledge that has three characteristics: (1) it is acquired with little or no environmental support; (2) it is procedural; (3) it is practically useful. McAdam, Mason, and McCrory (2007) reviewed Sternberg's work and made a conclusion that due to different initial experiences every participant of the process has, the acquisition of such knowledge is not always facilitated by deliberately created explicit learning environments, in fact, such environments may impede development or acquisition of knowledge. Stenmark (2000) suggests that "tacit knowledge <…> is <…> knowledge that cannot be easily articulated and thus only exists in people's hands and minds and manifests itself through their actions" (p. 10).

For obvious reasons, tacit knowledge is more problematic to analyse. Collins (2010) suggests distinguishing between three types of tacit knowledge: weak, medium, and strong. The author suggests that these adjectives refer to the degree of resistance of the tacit knowledge to being made explicit. According to Collins (2010), strong tacit knowledge can be referred to as collective tacit knowledge. This is the kind of knowledge that we as users do not know how to make explicit. This knowledge is referred to as collective, as it is rooted in the way the society works. Medium tacit knowledge is referred to by Collins (2010) as somatic tacit knowledge. The domain of this type of tacit knowledge is in the properties of individuals' bodies and brains as physical things (Collins, 2010). The author argue that this type of knowledge is similar to that possessed by animals and other living beings. The contention is that such knowledge could be converted into explicit (explicated) by, e.g. the researchers who observe behaviour of animals, humans, or other living organisms. Weak tacit knowledge is also referred to as relational tacit knowledge. It is knowledge that could

be made explicit but is not made explicit for trivial reasons (there is no need to make it explicit). Collins (2010) states that collective tacit knowledge draws from the nature of the social medium of individuals, somatic tacit knowledge is concerned with the nature of the body, and relational tacit knowledge is concerned with particular people related to each other. Any type of tacit knowledge can be encountered in organizations, just like in any other social medium. The explanation suggested by Collins (2010) implies two aspects: one that needs to be specified and another that can be discussed in the light of works by Nonaka (1994) and Nonaka and Takeuchi (1995). The former aspect that requires specifying is Collins' (2010) suggestion that weak tacit knowledge could be made explicit, but there is no need to make it explicit. This is a property of implicit knowledge, which is tacit from the perspective of other individuals but not from the point of view of an individual who possesses that knowledge. Whereas, tacit knowledge refers to the knowledge that is intuitive on the level of the individual's subconsciousness rather than individual's consciousness. Hence, the classification suggested by Collins (2010) may be limited to two types of tacit knowledge: strong and medium tacit knowledge. It is debatable though whether such labelling of tacit knowledge is purposeful. In fact, Collins (2010) refers to collective tacit knowledge as "strong" tacit knowledge, i.e. tacit knowledge rooted in the collective social consciousness (of the society, organization), because it is less susceptible to change. Whereas medium tacit knowledge is explained by Collins (2010) as belonging to the individual level, and, perhaps, more importantly as knowledge that can be expressed. A similar approach suggested by Nonaka and Takeuchi (1995) showed that necessary conditions are ensured (Nonaka & Takeuchi, 2000). The idea of the conversion of tacit knowledge into explicit has been rejected by Polanyi (1966). One way or the other, the discussion presented in this section only proves that tacit knowledge requires deeper investigation in the fields of knowledge management and organizational psychology.

The discipline of knowledge management fosters at least two approaches to knowledge creation (two generations): (a) the first generation which stresses the importance of the information technologies for knowledge creation; and (b) the second, which emphasises the factor of human interactions (Šajeva, 2009). The latter approach to knowledge management is employed in the dissertation.

Representatives of the field of knowledge management perceive learning as creation of organizational knowledge (i.e. knowledge that is required for achieving organization's goals) on the individual or collective levels. Therefore, organizations are interested in converting tacit knowledge of their members into explicit organizational knowledge which is internalised and contributes to the development of innovations and gives companies a competitive advantage in the market. This process of knowledge creation is known as organizational learning and shall be revisited in this dissertation when explaining Nonaka's (1994) model of knowledge creation.

A reasonable place to start the discussion on OL is the work of Argyris and Schön (1978). They are the earliest and most significant researchers in the field of OL, who describe organizational learning as a process mediated by the collaborative inquiry of individual members. In this process, the individuals assume the roles of

agents of organizational learning as they bring changes into organizational theory-in-use. Argyris and Schön (1978) stress the notion of experiential learning. The theory of experiential learning according to Kolb and Kolb (2005) is based on six propositions: (1) learning is best conceived as a process, not in terms of outcomes; (2) all learning is relearning; learning has the best result when learners can examine, test their ideas, as well as integrate them with more refined ideas; (3) learning requires the resolution of conflicts between dialectically opposed modes of adaptation to the world; learning is in its nature conflict driven; (4) learning is a holistic process of adaptation to the world; (5) learning results from synergetic transactions between the person and the environment; (6) learning is the process of creating knowledge.

Organizational learning

The idea of an organization that learns might be slightly confusing to education researchers. Easterby-Smith and Lyles (2011) clarified that in the organizational context this learning initially referred to storing knowledge over time. This explanation for OL was first suggested by Cyert and March (1963). Since then, both the field of knowledge management and the concept of OL have undergone many changes. The approach to organizational learning as storing knowledge has shifted towards the emphasis of what Nonaka (1994:2) referred to as "social interaction of individuals that share and develop knowledge." This trend towards individual learning within the organization has since been continued by other researchers (cf. di Stefano et al., 2017; Örtenblad, 2018; Pedler & Burgoyne, 2017; Santa, 2015; Jucevičienė, 2007). Knowledge management (KM) employs systematic acquisition, organization, and communication of knowledge to systematically improve productivity and effectiveness of members of an organization (Alavi & Leidner, 1999). The relationship between KM and OL has been discussed, among others, by Wu and Chen (2014) who have noticed that in the discipline of KM, OL is regarded as means for improvement of knowledge creation and use.

Chiva, Ghauri, and Alegre (2014) have managed to capture the essence of the concept quite well. According to the authors, "OL is "the process through which organizations change or modify their mental models, rules, processes or knowledge, maintaining or improving their performance" (Chiva et al., 2014, p. 689).

Different approaches to OL can be found in scholarly literature. Huber (1991) argued that OL is a combination of information acquisition, information distribution, information interpretation, and organizational memory. Rosenstiel and Koch (2001) stated that organizational learning is critical if organizations seek to adapt to their social politic and economic contexts. As noted by Senge (1994), cited in Senge (2014), "learning in organizations means the continuous testing of experience, and the transformation of that experience into knowledge – accessible to the whole organization and relevant to its core purposes". Argote and Miron-Spektor (2011) defined OL as a change in the organization's behaviour that occurs as the organization acquires experience. According to Casey (2005), learning is essential for companies on all levels if the organization is to survive in the competitive environment. At the same time the authors stress that OL is only possible when it is implemented as a

system, i.e. when there is a relationship between the individual and collective learning (on both group and organization levels). Similarly, Dixon (1999, p. 6) refers to organizational learning as "the intentional use of learning processes at the individual, group and system level to continuously transform the organization in a direction that is increasingly satisfying to its stakeholders." Vera and Crossan (2003a; 2003b) also seem to agree that learning in an organization is rooted in the improvisation of individuals, continues with a shared interpretation and integration and is finalized with institutionalization of what has been "learned" (Vera & Crossan, 2003, p. 131). In Senge's (1990) writing this is explained through the metaphor of a jazz ensemble.

There are numerous other definitions and explanations for OL and the way it occurs. It is because OL is multidisciplinary and investigated by researchers with different backgrounds. For instance, Bell, Whitwell, and Lucas (2002) suggest that these different "schools of thought" can be classified into four groups:

- *economic* – learning occurs through repetition of workflows and processes and results in acquisition of new tacit knowledge and behavioural change (for more details see Argote (1993), Argote & Miron-Spektor, (2011));
- *developmental* – where a learning organization is seen as a stage in the evolution of the organization. In this case, the learning organization is understood as an organization that has enabled continuous organizational learning on the individual and collective levels (group's and organization's level) (Jucevičienė, 2007). In this particular model, knowledge that is originally tacit evolves into organizational cognition;
- *managerial* – that is achieved through intervention into organizational culture and practices (see Senge, 1993). According to Cheng et al. (2014), in terms of a management task, OL is one concerned with controlling and planning. It includes such tasks as creation, capture, and internalization of organizational knowledge.
- *process* – where OL is seen as a matter of information processing (Argyris & Schön, 1978; Huber, 1991).

OL is a key element which "represents the essence of the organizations competitive advantage" (Real, Roldán, & Leal, 2014, p. 201). Although OL is argued to be essential for organizations acting in unpredictable environments to cope with unpredicted circumstances faster than the competition (Garvin, Edmondson, & Gino, 2008), many organizations still find it challenging to implement OL (Garvin et al. 2008; Taylor, Templeton, & Baker, 2010). One of the reasons for such difficulties might be the highly conceptual nature of OL. According to Garvin et al. (2008), Reich (2007), and Taylor et al. (2010), there is little practical guidance to implementing OL. Furthermore, Wu and Chen (2014) noticed that there is still a great deal of confusion regarding the concept of OL itself.

Argote and Miron-Spektor (2011) elaborated that organizational knowledge is created as a result of interaction of organizational experience and the organizational context and illustrated the process with a model (see Figure 2).

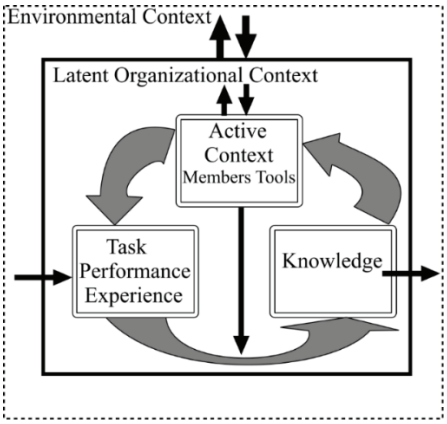

Figure 2. A theoretical framework for analysing organizational learning (Argote & Miron-Spektor, 2011)

According to the researchers Argote and Miron-Spektor (2011), the model illustrates a process that facilitates transformation of the task performance experience into knowledge through organizational learning. The authors stress the paramount role of the context for OL. A distinction is made between the active organizational context, i.e. capable of taking actions and performing tasks (members, tools, and their interaction to perform tasks) and latent organizational context that influences the active context. The authors claim that external environmental context may also impact OL processes within an organization (Argote & Miron-Spektor, 2011). See Table 1 for examples of different types of contexts (based on Argote & Miron-Spektor, 2011).

Table 1. Organizational context (based on a model suggested by Argote & Miron-Spekter, 2011)

External Environmental Context	**Organizational Context**	
Competitors	*Active organizational context*	*Latent organizational context*
Clients	Members	Structure
Educational establishments	Tools	Culture
Governments	Tasks	Relationships with other organizations
		Identity
		Goals
		Incentives
		Strategy
		Technology
		Memory

According to Valinevičienė (2017), significant characteristics of the organizational learning (OL) are as follows: (i) it is integrated into organizational

activities, (ii) it promotes change, and (iii) it covers both formal and informal learning activities.

It is also important to determine on what levels the learning occurs in organizations. Argote, Denome, and Fuchs (2011) maintained that OL occurred on four levels: individual, group, organization, and inter-organization. Jucevičienė (2007) argued that learning can occur on two levels: individual and collective. In this case, individual learning is understood as constructing personal knowledge (Jucevičienė, 2007). Mozuriūnienė (2010) claimed that individual learning is related to the tasks that individuals carry out as members of an organization. On the collective level, learning occurs when individuals act together within divisions or groups (Mozuriūnienė, 2010). To get an understanding of what learning looks like on the level of the organization, it is important to understand the individual learning process (Wang & Ahmed, 2003).

Jucevičienė (2007) also explained that collective learning can occur on two levels: the group's level and organization's level. The peculiarity of such learning, according to the author, is that individuals construct collective knowledge, i.e. they acquire shared experience (Jucevičienė, 2007). Similarly, Yang (2007) explained that OL affects both individual and organizational behaviours by facilitating reflections on effects of the individuals and the organization as such. It also promotes better understanding of organizational environments and facilitates decision making (Yang, 2007).

Marquardt (1995) has also noticed that learning in organisations can occur at three levels. The author seems to agree with the ideas of some other scholars (see e.g. Senge, 2014) that individual learning is necessary, as it is individuals who comprise organizational units. According to Marquardt (1995, p. 12), the factors that may impact learning of individuals within the organization include the following:

a) Individual and collective accountability for learning.

b) Locus and focus of individual learning (learning should have immediate application to the job).

c) Accelerated learning techniques.

d) Personal development plan.

e) Abundant opportunities available for professional development.

f) Individual learning linked to organisational learning in an explicit and structured way.

Group/team learning according to Marquardt (1995) refers to the fact that work teams have to be able to create and learn as a whole. It is especially important for the teams to discover ways to create and retain learning better (learning to learn). Team learning occurs to a greater extent if teams are rewarded for the learning that is beneficial for the organization. Marquardt (1995) employs Watkins and Marsick's team learning model (1993) (discussed in further sections) that shows the learning organisation as the aggregate of individuals and organisational features.

The author continues with the explanation of organisational learning which takes place through sharing insights, knowledge, and developing shared understanding (mental models) of members of the organisation. OL is expected to be

built on past knowledge and experience with the reliance on institutional mechanisms (policies, strategies, and other) used to capture and retain knowledge (Marquardt, 1995). Wang and Ahmed (2003) advice against viewing OL as a collection of individual learning processes. The authors claimed that OL includes the following elements: (a) interaction between individuals in the organization, (b) interaction between organizations as an entity, and (c) interaction between the organization and its context (Wang & Ahmed, 2003).

Basten and Haamann (2018) suggested an aggregated and categorized overview of approaches to design learning organizations. The authors suggested that although OL has received an increased amount of interest over the recent years, the theory in many cases still relies on abstract descriptions of OL theories.

Learning in organizations is as inevitable as it is in the lives of people. The only question, according to Basten and Haamann (2018), is whether learning is conducted systematically. Similarly, not all the learning that occurs in organizations is necessary beneficial, as inadequate learning processes may result in misleading implications. Hence, organizations rely on systematic approaches in order to gain the ability for systematic learning. The organizational learning (OL) discipline is concerned with developing and systemizing such approaches (Crossan, Lane, & White, 1999; Schneider, von Hunnius, & Basili, 2002).

Despite the multitude of definitions presented in the section, organizational learning can, arguably, be described as a process involving knowledge acquisition distribution and generation. This process is expected to have an impact on the organization's mental models, rules, and processes. It is critical for organizations seeking to maintain their competitive advantages in turbulent times. OL occurs as organizations interact with the context they operate in and changes occur as a result of these interactions.

In the dissertation, the author assumes that organizational learning takes place on three levels: the individual level, the group level, and the organization (as a system) level. The first one deals with individual learning, whereas the latter two are somewhat unique, as they involve collective learning. These levels are interconnected and constitute OL only when occur as elements of a single process.

Nonaka on organizational learning as a construction of organizational knowledge

OL is a process that facilitates development of new perspectives, at the same time it is a valuable resource for the creation of new organizational knowledge (Cheng, Niu, & Niu, 2014; Chiva et al., 2014; Turner & Pennington, 2015). In the conditions of the ever-changing business environments, with the rapid technological evolution, this feature gains particular prominence (Loermans, 2002). One of the best-known models for the development of organizational knowledge has been created by Nonaka (2004). The model (known as SECI) explains creation of organizational knowledge through conversion of tacit and explicit knowledge of the members within an organization.

Nonaka (1994) has proposed that such knowledge conversion within an organization takes place through four modes: socialization, externalization, combination, and internalization. The model can be explained as follows: while working together (in groups), people form certain group knowledge from the individual tacit knowledge the group members possess. Which means they have individual and collective tacit knowledge. When they have to make a joint decision or decide on a shared vision of the group, they start negotiating. During this process, they need to communicate with each other, thus the knowledge that is not explicit is being externalised. If this knowledge is implicit (i.e. can be easily articulated), it can be expressed and agreed on easily. However, if it is truly tacit knowledge, externalization can be problematic (requires reflection or other methods). Further, groups, departments (more often representatives of the groups) need to agree on the explicit knowledge of the work groups and create explicit knowledge on the organization's level (combination), e.g. rules, norms, etc. Thus, the stage of combination occurs at the organization's as a system's level when the collective explicit knowledge of the groups is combined into collective explicit knowledge at the higher, organization's, level. This knowledge is provided for the individuals who use this knowledge at work, and at last it becomes their individual tacit knowledge (internalization). The process of internalization facilitates knowledge dissemination throughout the organization. The disseminated knowledge widens and alters thinking patterns of the members of the organization. Individuals working together interact with each other creating new tacit knowledge in the process (socialization). The process is cyclic; hence, the modes repeat and can be graphically depicted as a spiral.

The modes suggested by Nonaka (1994) have later evolved into the SECI Model of Organizational Knowledge Creation (Nonaka & Takeuchi, 1996) (see Figure. 3). As noted by Jucevičiene (2007), the process can be investigated starting from any given mode.

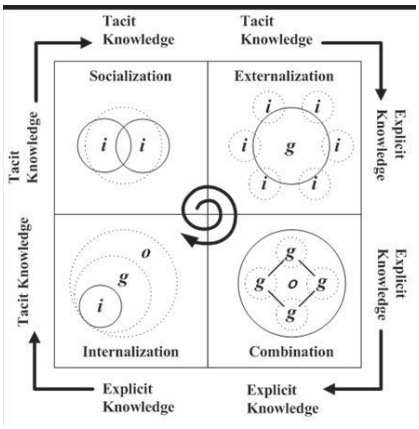

Figure 3. Nonaka and Takeuchi's (1995) model of Organizational Knowledge Creation

The model suggested by Nonaka and Takeuchi (1995) was advanced even further by Nonaka, Toyama, and Konno (2000) by adding the concept of "ba", which can be

translated into English as a "place" as well as the concept of knowledge assets. The authors defined "ba" as "a shared space for emerging relationships. This space can be physical, virtual, mental or any combination of them" (Nonaka et al., 2000, p. 14). The definition provided by the author makes us think of "ba" in more complex terms than just a place; it is rather understood as an environment. The authors described "ba" as having embedded knowledge which can be acquired through one's own experience or through reflections on the experiences of others (Nonaka and Konno, 1998). It becomes obvious that if students are to develop the OL capability, reflection on their activities is required.

The further discussion on the concept of "ba" led to the development of a revised model by Nonaka et al. (2000). The model described three elements of knowledge creating process: (1) the SECI process of knowledge conversion; (2) "ba", the shared context for knowledge creation; and (3) knowledge assets: the inputs, outputs, and moderator of the knowledge-creating process (Nonaka et al., 2000).

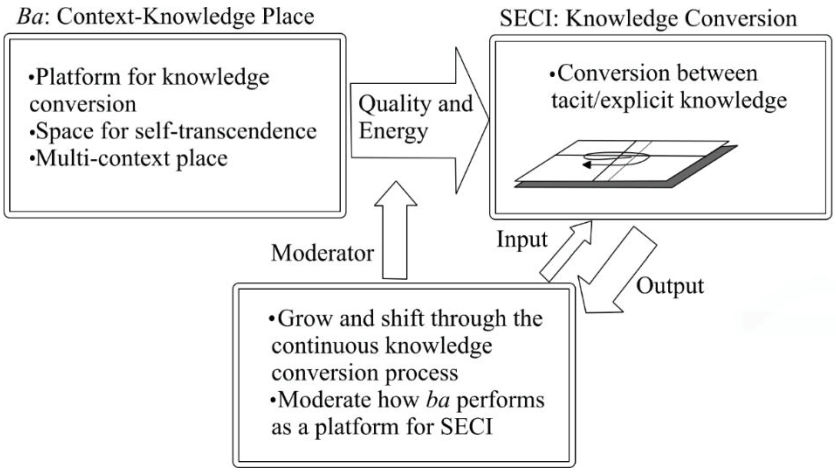

Figure 4. Three elements of knowledge creating process (Nonaka, Toyama, & Konno, 2000, p. 8)

The authors have discussed four different types of "ba":

1. *Originating* – individuals share experience, feelings, emotions, and mental models. It creates the context for socialization.

2. *Dialoguing* – individuals share mental models and skills, converted them into common terms, and articulate as concepts. It enables the context for externalization.

3. *Systemising* – creates a context for the combination of explicit knowledge, which is relatively easy to transmit to a broad audience in written form.

4. *Exercising* – creates a context for internalisation. Individuals embody explicit knowledge that is communicated through virtual media (Nonaka et al., 2000, pp. 16–17).

The types of "ba" suggested above are characterised by: (a) types of interaction, i.e. whether the interaction takes place individually or collectively; and (b) the media

used in such interactions, i.e., whether the interaction takes place as a face-to-face contact or through virtual media, e.g. books, manuals, memos, e-mails, or teleconferences (Nonaka, et al., 2000). Having these environments in the organization (whether simulated for educational purposes or real) is an important factor of that enables member of the organization to participate in the knowledge creation process.

According to Nonaka et al. (2000), "knowledge assets" serve as a base for knowledge creation within an organization. The authors define knowledge assets as "firm-specific resources that are indispensable to create values for the firm. Knowledge assets are the inputs, outputs and moderating factors of the knowledge-creating process" (Nonaka et al., 2000, p. 20). The authors present an example of trust generated among members of an organization, which is at the same an output of the knowledge-creating process and a factor moderating the functioning of "ba" as a platform for the knowledge-creating process (Nonaka et al., 2000). Nonaka et al., (2000, p. 21) identify four categories of knowledge assets in SECI order as follows:

S – Experiential Knowledge Assets: tacit knowledge emergent in collective experience, including the growing skills and judgment of individuals, prosocial feelings like trust and care, and motivational resources fuelling participations, passions, and tensions.

E – Conceptual Knowledge Assets: explicit knowledge in symbolic form, including product concepts, brand equity, design styles, symbols, and language.

C – Systemic Knowledge Assets: explicit, codified, and systematic knowledge stores in documents, databases, manuals, specifications, and patents.

I – Routine Knowledge Assets: tacit procedural knowledge routinized and embedded in organizational cultures, actions, and daily practices.

Nonaka's and his co-author's ideas are central to the discussion proposed in this dissertation. The SECI model, knowledge assets, and, especially, the concept of the environments, which serve as a platform for creating organizational learning, are discussed in the following sections, and student activities within these environments are investigated in the third chapter of the dissertation.

Organizational learning capability

Developing as well as measuring capability is rather problematic due to seemingly intuitive nature of the phenomenon. Capability is usually used to describe a person's ability to do or to achieve certain desired functions (Sen, 1993). It is an integration of confidence in one's knowledge, skills, self-esteem, and values. In other words, capable people have confidence in their ability to take effective and appropriate action, explain what they are about, live and work effectively with others, and continue to learn from their experiences as individuals and in association with others in a diverse and changing society (Stephenson, 2007; Stephenson & Yorke, 2013). This makes capability easier to recognize (one which performs tasks with a high level of confidence) than measure, cf. as Lester (2014) puts it: "it has a know-it-when-you-see-it property that cannot easily be translated into standards and specifications" (p. 37). Lester (2014) describes capability as a quality of having the

potential to become competent, where capability is seen as similar to competence but having a less prescriptive character, thus also resembling what the author refers to as internal competency, hence extending beyond competence. In other words, rather than dealing with the developed skillset, as competence does, capability is concerned with the individual's potential. According to Hase (1999), application of the capability concept has contributed to the development of innovative learning approaches that help develop capability in individuals, in both education settings as well as the workplace. Similarly, Stephenson (2007) adopts an education researcher's approach to developing capability. The author stresses the importance of HE as well as the application of varied teaching/learning approaches to prepare students for the turbulence of the dynamically evolving labour market (Stephenson, 2007).

The OL capability can be investigated from two perspectives: (a) as related to organization, i.e. management phenomenon, and (b) as related to an individual, i.e. human phenomenon. Although this dissertation pursues the ends of an educational research and focuses on the OL capability as a human phenomenon, both perspectives are going to be discussed to arrive at a full understanding of the phenomenon of the OL capability.

Organizational learning capability as a management phenomenon

Some studies have addressed the concept of the organizational learning capability and the problems of developing such a capability for gaining a competitive advantage and ensuring organizational success in the turbulent economic conditions (cf. Dibella et al., 1996; Goh & Richards, 1997; Hult & Ferrell, 1997; Jerez-Gomez et al., 2005; Chiva et al., 2007). What most authors seem to agree on, is that the OL capability could be defined as a set of organizational and managerial characteristics, practices, skills, and factors that enable or facilitate the organizational learning processes within an organization.

According to Chiva et al. (2007), the OL capability is a concept that revolves around the significance of the facilitating factors for organisational learning or the organisational capability to learn. These factors have been summarized by Gomez et al. (2003) and Ozan Onağ et al. (2014). Gomez et al. (2003) suggested investigating the OL capability as having four dimensions. These dimensions are:

1. Managerial commitment – managers recognize relevance of learning and facilitate creation of a learning-driven corporate culture.

2. Systems perspective (based on Senge, 1990) – bringing the members of the organization under a common identity, aligning the goals and making sure that people believe in the organization's goals.

3. Openness and experimentation – organizational learning relies on a double-loop learning, which requires environments that are open to new ideas and that welcome new perspectives, both from the inside and outside, which enables members of the organization to constantly renew, widen, and improve their knowledge.

4. Knowledge transfer and integration (Gomez et al., 2003).

Ozan Onağ et al. (2014) have widened the scope and discovered that the OL capability encompasses 11 dimensions:

1. “Openness and interaction with the external environment” – i.e. the extent of relationships with the external environment and a climate of openness that encourages the new ideas and points of views.

2. “Experimentation”, i.e. the extent of freedom that employees exploit in the pursuit of new ways of getting on with the tasks as well as liberty to take risks and overall risk tolerance.

3. “Managerial commitment” i.e. the extent to which managers recognize the relevance of learning for organizational success.

4. “Participative decision making”, i.e. employee involvement and the level of influence they have on the decision-making.

5. “Leadership commitment and empowerment” or the role of leaders in the organization with respect to helping employees.

6. “Clarity of purpose and mission”, i.e. how clearly the employees understand the mission of the organization and their role in the pursuit of the mission.

7. “Knowledge transfer and integration”, i.e. internal transfer and integration of knowledge.

8. “Teamwork and group-problem solving”, i.e. the extent of teamwork possible in the organization to solve problems and create knowledge.

9. “Dialogue”, i.e. a sustained collective inquiry into the processes, assumptions, and certainties that make up everyday experience.

10. “Risk taking”, i.e. tolerance of ambiguity, uncertainty, and errors.

11. “System perspective”, i.e. bringing the organization’s members together around a common identity and seeing the ‘big picture’ of all the interconnections of the entities involved in the organization’s activities.

These factors have been drafted for organizational settings, but only several of them are related to the OL capability as a human phenomenon. Summarizing the mentioned research, it needs to be noted that all dimensions investigated in both papers apply to the organizational learning capability of the organization, i.e. to the features of an organization that facilitate OL. However, they also draw an image of a member of an organization capable of contributing to knowledge creation and dissemination. Such “capable” employee is open to new ideas and suggestions both from inside and outside of the organization and is not afraid to experiment, recognizes the importance of learning for the pursuit of the organization’s goals, understands and recognizes such goals as well as contributes to making decisions related to these goals, spreads the created knowledge within the organization and seeks to incorporate it into his routines, is capable of working in a team or group and effectively communicating with the other members of the group.

Furthermore, throughout the research literature attention is devoted by many of the investigated authors to understanding and pursuing the organization’s goal, which is without a shade of doubt an important factor of organizational learning.

OL capability as a human quality

In the context of educational research, the focus shifts from the organization's efforts to implement OL to educational empowerment of the individuals who practice OL. This once again stresses the importance of developing the OL capability for an individual who practices OL. In this dissertation the author supports the researchers (e.g. Dibella et al., 1996; Goh & Richards, 1997; Hult,& Ferrell, 1997; Jerez-Gomez et al., 2005; Chiva et al., 2007, etc.) who recognize the goals, content, and results of OL as an object of organizational activities (Shin et al., 2017) but attribute the central role in the OL to individuals, i.e. particular employees of an organization, who pursue organizational goals through learning on the individual level, group level, and level of the organization as a whole (cf. Örtenblad, 2018; Pedler& Burgoyne, 2017; Santa, 2015; Jucevičienė, 2007; Senge, 2014, 1990; Nonaka, 1994). In this respect, employees are expected to display such OL performance which would enable these employees to successfully create knowledge on all the levels mentioned above. This would by all means require certain knowledge and skills. However, this may not be enough; it also requires readiness in terms of values and commitment to the creation of the organizational knowledge. These qualities are mostly revealed through the notion of capability, which according to Sen (1995) means "the freedoms to achieve in general and the capability to function in particular (especially when assessing freedoms to pursue well-being)" (p. 266). Noteworthy in this context is the concept of capability as described by Stephenson (1992), where the author relates capability to justified confidence in one's abilities take effective and appropriate action, explain what they are about, live and work effectively with others, and continue to learn from their experiences as individuals and in association with others in a diverse and changing society.

Therefore, ***organizational learning capability as a human phenomenon*** refers to *the individual's readiness to create organizational knowledge, necessary for achieving the organization's goals on the individual, group and organization (as a system) levels*. This readiness is expressed through not only the will to act, but also through the awareness of the organization's goals as well as awareness of the means to achieve these goals, knowledge of organizational learning and the ability to implement OL in practice.

Since the object of this dissertation focuses on factors influencing the development of students' OL capability, it will be considered sufficient to detect the factors which may influence the development of students' OL capability that affect students within specific environments. This requires analysing educational and other environments where students learn.

1.1.3. Educational and learning environments as a space of organizational learning

From the perspective of university education, the concept of "ba", as a place of OL, first suggested by Nonaka and Konno (1998), can be illustrated through creation of particular environments in the formal curriculum. However, the notion of lifelong learning urges to view student learning as learning everywhere and always, which

means learning takes place not only in the environments that were purposely designed in advance.

In order to investigate the environments of students' learning in greater detail and discuss the factors that determine students' learning in these environments, it is expedient to use the theory of educational and learning environments (Jucevičienė, 2007).

Different definitions of the term *learning environment* (LE) can be found in scholarly literature. Tautkevičienė (2004) states that in its general sense learning environment can be understood as space which is utilized by learners to work with sources of information and more experienced individuals in a constructive, volitional, and conscious manner on the basis of purposefulness and reflection, to acquire knowledge, skills, and values. *Learning environment* is investigated as individual's dimension, as it is individually perceived by learners and emerges from the educational environment (Tautkevičienė, 2005). The next section discusses some theoretical aspects of the educational and learning environments.

The theory of educational and learning environments

According to Jucevičienė (2007), the term *learning environment* is too general, whether it is understood as any informational space that surrounds a human being (Graetz, 2006) or as an aggregate of elements, as discussed by Hafiza and Al-Mahmood (2016): "learning environments encompass student/teacher interactions, teaching, and learning activity, good physical resources and students' psychosocial and emotional aspects that are experienced by students and other stakeholders in a learning institution", any informational space is already a potential learning environment. Therefore, even purposefully designed educational environment can also be referred to as a potential learning environment. However, Jucevičienė (2008) suggests investigating educational environments separately from potential learning environments for the sake of research convenience, the latter shall then be referred to as such informational spaces, which were not purposefully designed with educational goals in mind. The kind (or part) of educational environment or potential learning environment identified by an individual as acceptable for his/her learning, and used by the individual in the learning process, should be referred to as "personal learning environment" (Jucevičienė, 2007). Jucevičienė (2010) states that such environment is identified by each individual separately based on one's learning objectives, abilities, needs, and experience. Considering the constructivist framework, it is possible to state that each individual learns by interacting with his/her personal learning environment. Investigations into personal learning environments conducted by education researchers at Kaunas University of Technology revealed that different personal learning environments could be identified from the same educational environment (Jucevičienė & Stanikūnienė, 2001; Lipinskienė, 2002; Tautkevičienė, 2004; Stanikūnienė, 2007).

As mentioned above, learning is not restricted to school or university classrooms but rather occurs throughout life and in a range of different situations. These situations shall not include environments designed by educators but shall emerge from different

roles people assume throughout their lives. Jucevičienė (2008) states that it is possible to distinguish between several types of such *potential learning environments*:

a) Potential learning environments with fixed verbal (written, visual, spoken) or virtual information of communication channels (the Internet, TV).

b) Potential learning environment developed on the basis of performance. In this case, an individual should develop communication channels by introspection; if performance took place a long time ago, it has to be reconstructed. To transform performance-based information into knowledge, reflection and self-analysis should be employed.

c) Potential learning environments developed on the basis of performance with other people, which involves information sharing, e.g., networking in a cluster.

d) Potential learning environments developed by observing performance of other people. Individuals often have to develop their own channels of communication by observation.

e) Potential learning environments developed on the basis of everyday events. In this case, individuals also often have to develop communication channels by applying observation techniques (Jucevičienė, 2008).

Jucevičienė (2013) claims that learners identify personal learning environments by transforming them from potential learning environment (or/and educational environments) depending on the intrinsic factors:

1. Learning aim set by the learner.
2. Learner's initial knowledge of the subject and his/her abilities.
3. Ability to notice elements of learning environments, especially, information, and use means and methods of communicating information, cooperate with subjects that provide information.
4. Experience.
5. Motivation for detecting the learning environment.
6. Individual learning styles and learning strategies.

It is clear that these potential learning environments (unlike educational environments), as a rule, are not organized by the educator and are, therefore, related to informal learning.

As seen from the explanations above, each learner will perceive his/her own learning environments on a very individual scale. Due to different experience, abilities or learning aims set by a learner will shape his/her learning environment. According to Jucevičienė (2010), learners may not fully accept the developed educational environments as created by educators but rather the way they are able to identify them is based on their experience, abilities, and learning aims. As noted by researchers (Jucevičienė, 2010; Tautkevičienė 2005), the relationship between personal learning environment and educational environment can be threefold. These environments may fully overlap, partially overlap, or be completely different.

From the perspective of educational aims, ideally, educational environment and individual's personal learning environments should coincide. This would mean that the educational environment created by the educator was fully perceived by the learner as his/her personal learning environment (Jucevičienė, 2013). However, researchers

have discovered that there is more than one way for the educational environment and personal learning environment to overlap. Particularly interesting case of partial overlapping was described by Jucevičienė (2013). The author investigated a case wherein the learner's personal learning environment partially coincided with an educational environment but was wider than the educational environment. Such instances are possible if the learner's personal learning environment partially consists of an educational environment and partially of a certain potential learning environment. It is possible that the two parts of learner's personal learning environment exist in a perfect harmony and supplement each other. This case is also a "cue" for the educator to start discussions with the learner in order to clarify his/her learning objectives and content. However, if the learner creates a personal learning environment with learning aims that contradict or do not match the aims set by the educator, the educational effect will not deliver the desired outcomes (Jucevičienė, 2013).

Researchers claim that a situation where educational environment and personal learning environment are completely mismatched can be considered a complete pedagogical failure (Jucevičienė & Taukevičienė, 2002). Such situations involve high risk that the individual will develop destructive, from the teacher's point of view, rather than constructive learning environment (Jucevičienė, 2013). On the other hand, the mismatch in terms of learning methods and content may be acceptable and efficient if the student chooses his/her own way of achieving the learning objective having previously discussed and harmonized it with the teacher.

To summarise what has been stated above, we can say that learners are surrounded by educational environments (purposefully created considering educational aims and operated by an educator) and potential learning environments (environments that were not deliberately designed for educational purpose but still have the potential to become the learner's unique way of achieving the learning objectives. Elements (or the whole) of these environments are identified and incorporated into the learner's personal learning environments. What is more, it is important to mention that these educational and (potential) learning environments are dynamic, i.e. they can be investigated only in a specific moment in time.

Consider that OL, as a cyclic process of continuous organizational knowledge creation within a knowledge organization, is revealed through the SECI model of organizational knowledge creation. The SECI model is manifested through four consistent phases: socialization; externalization; combination, and internalization. These phases describe OL on three levels of an organization: individual, group, and entire organization (or its significantly large part). It is also important to mention that organizational learning within an organization seems to occur in accordance with two scenarios: (1) it can take place as an activity supported by company managers (formal, included into employee's job description) or (2) not supported, voluntary activity (not included into job description). When formal efforts to empower OL take place, the entire organization is often involved and such OL can be illustrated with the help of the SECI model. Informal organizational learning follows the principle of "learning by doing".

Jucevičienė (2013) devotes significant attention to the personal learning environment which in formal learning settings (e.g. university studies) may be recognized by the learner from elements (or the whole) of the educational environment and potential learning environments. Educational environment is investigated as institutional dimension. As a rule, a particular educational environment, for instance that created by the educator for a specific group of students, is a part of a larger educational environment. Since educational environments are dynamic, their parameters can be investigated only at a specific period of time.

Jucevičienė (2013) argued that educational environments are characterized by the following parameters:

1. Educational aim.
2. Learners and their learning capability.
3. Educational content to match the educational aim.
4. Methods and means to communicate the educational content.
5. Methods and means to create educational content in the process of learners' performance.
6. Physical ambience that meets both the educational aim and conditions to implement it and objects within it.
7. People necessary to implement the educational aims and their competence.

The parameters presented above match those of a pedagogical system, however, as the author of the dissertation mentioned earlier, educational environments are distinctive in that they are dynamic. Furthermore, Jucevičienė (2013) enumerates the eighth parameter: the X element(s) which may appear accidentally. The(se) element(s) cannot be deliberately planned and may have a serious impact on the intended educational environment (e.g. noise outside that prevents students from concentrating). The characteristics of educational environments mentioned above will impact the possibilities for students to develop OL competence in the formal learning process.

The above-mentioned parameters, except for the eighth, were also presented in the works of the authors who researched pedagogical systems (Bowden & Marton, 1998; Collins, 1993; Wilson, 1995). However, the educational environment and pedagogical system have two significant differences:

a) The pedagogical system reflects the relationships between the seven parameters mentioned above, however, in fact it is but a pedagogical design (the "ideal system"). This design is intended for implementation. However, when implemented it can differ significantly from the original plan. Whereas the educational environment is the real image of the education process, a kind of a "photo" in a specific period of time. Thus, the educational environment as such can only be discussed in terms of a phenomenon, whereas in reality researchers deal with a sequence/chain of educational environments where each educational environment is at least a little (or more) different the pedagogical system, no matter how hard educator tries to implement it is determined by the planned parameters.

b) The educator has to continuously evaluate the learners' reaction to the designed educational environment. If necessary, changes have to be introduced to

achieve a better educational effect. In practice, it is almost impossible to foresee how the educational environment shall change in each instance, as a number of factors are in play and some of them cannot be foreseen. Those factors are not only reactions of the learners, but also other circumstances which sometimes have very little to do with the organization of the educational process. Consider such an example: students are engaged in activities that require computers. The teacher in the computer classroom explains groups of students what their tasks are. Suddenly a loud concrete mixer starts working outside. Without a shade of doubt, the teacher has to react to such changes and an unplanned educational environment can occur (e.g. the educator asks students to change rooms, but the other room has an insufficient number of computers). Thus, the parameter "other unforeseen factors" is very important and even complex. Furthermore, educational environment is a dynamic phenomenon, i.e. as long as the learning process is concerned, it is expedient to discuss a sequence (chain) of educational environments where each educational environment differs from the previous one.

Posner and Rudnitsky (2006) discussed about creating effective learning environments as elements of the curriculum. The authors distinguished the following elements of the efficient learning environment: aims, feedback, motivation, risks, learning styles, and prior knowledge. It is clear that what the authors refer to as learning environments are regarded by Jucevičienė (2008, 2010) as educational environments.

Since educational environments are described as created and impacted by the educator, it becomes clear that they can be investigated in the context of formal learning. According to Coombs and Ahmed (1974) quoted by Sevdalis and Skoumios (2014), formal learning is defined as "highly institutionalized, chronologically graded and hierarchically structured "education system" spanning lower primary school and the upper reaches of university" (Sevdalis & Skoumios, 2014). However, this definition is inaccurate as it is more suitable for defining education rather than learning. The current situation is aimed at looking at formal learning from a different perspective; from the perspective of the learning paradigm rather than the teaching paradigm (Jucevičienė, 2010). According to the teaching paradigm, formal learning should be considered as the learning process formally organised and managed by an educator. In this respect, students' learning space is limited only to the educational environment created/selected by the educator.

The learning paradigm emphasises and empowers students' self-directed learning to achieve the agreed learning outcomes. Furthermore, each student can achieve these outcomes in different ways. Therefore, student education at universities goes beyond traditional classroom activities. In fact, such an approach to university education was already imbedded in the concept of traditional universities long before education specialists started discussing the idea of the learning paradigm. In his work *The Idea of a University*, John Henry Newman (1889) discussed the relevance of the university as a place of "gathering". The points addressed by Newman in his works are mostly relevant to residential universities (Oxbridge model-based universities). The peculiarities of this type of universities lie in the student's physical presence on

campus. In such HE institutions students are engaged in the formal classroom activities at their faculties during the first half of the day, while in the second half, they are involved in non-formal or informal learning activities (seminars, exhibitions, book presentations, etc.) on campus, particularly, at their places of residency that are colleges.

Personal learning environments and Web-based learning

In *Theoretical Foundations of Learning Environments* Jonassen and Land (2014) reviewed the educational landscape after the shift of educational paradigms from teaching to learning and advocated for use of the term *student-centred learning environment* (SCLE). Within the conceptual rationale adopted in this dissertation, the term SCLE corresponds to personal learning environment in Jucevičienė's (2007, 2010, 2013) theory of educational and learning environments.

Not only have the emerging trends in tertiary education seen a shift from teacher-centred to learner-centred education (from teaching to learning paradigm), Web-based learning environments in the HE curriculum also seem to have proliferated (Jonassen & Land, 2014). The review of the current scientific research (Attwell, 2007; McLoughlin & Lee, 2010, 2011; Valinevičienė, 2013; Valinevičienė & Dubosas, 2014; Rahimi, van den Berg, & Veen, 2014) also revealed that the focus of researchers has been shifting towards application of modern computer technologies in personalised learning environments. However, the very ambitious term *personal learning environment*, in the light of the conceptual positions adopted in this dissertation, may be slightly misleading. A question needs to be asked, "Does the fact that Web 2.0 allows communication between the faculty and students as well as individualization of accounts for the learners mean we are dealing with personal learning environment?" Probably not. It is definitely a potential learning environment. It does have elements of an educational environment (as much as the teacher manages to fashion it like one), but how much of the information is accepted by the students when they create their personal learning environments is a question yet to be answered. Attwell (2007) addressed the problem of applying Web 2.0 possibilities for enabling personal learning environments and noticed that personal learning environments should not be identified as an application but should rather be understood as a new approach to the use of new technologies for learning. The author also noticed that personal learning environments supported by Web 2.0 possibilities provide more holistic learning environments and bridge learning institutions with the outside world (Atwell, 2007). In the light of the theoretical background adopted by the author of the dissertation, Atwell's (2007) point of view is fully compliant with the author's position, as the personal learning environments are considered to consist of the educational and potential learning environments.

McLoughlin and Lee (2010) supported integration of Web 2.0 tools and strategies into the learning environments. The authors argued that students' interaction with Web 2.0 technologies and social media can help develop desirable skills, which overlap with the skills desired by the employers. However, the authors also warned against superficial approach including Web 2.0 tools into the personal learning

environments and advised caution as some of these tools may cause privacy and other issues (McLoughlin & Lee, 2010).

Valinevičienė (2013) investigated how Web 2.0 tools promoted the development of students' personal learning environments from the university's educational environment. The author noticed that students develop personal learning environments not only from the university's educational environment, but also from other potential learning environments, for instance, Web 2.0. In such cases, student's personal learning environment overlaps with the university's educational environment as well as other potential learning environments (Valinevičienė, 2013).

Rahimi, van den Berg, and Veen (2014) suggested a theory-informed model to facilitate students' engagement in constructing their personal learning environment using Web 2.0. The model suggested by the authors consisted of four elements: student's control dimensions, student-centric instructional approaches, the learning potential of Web 2.0 tools and services, and technology enhanced learning activities. Research revealed that the model promoted students' involvement in creating their personal learning environment (Rahimi, et al., 2014).

Summarizing all above mentioned, it is expedient to consider the following aspects of the theory of educational and learning environments (Jucevičienė, 2010):

- University students' educational environments can be characterized as formal environments designed by the educator which can be characterized by the following parameters: educational aim; learners and their learning capability; educational content to match the educational aim; methods and means to communicate the educational content; methods and means to create educational content in the process of learners' performance; physical ambience that meets both the educational aim and conditions to implement it and objects within it; X parameter which may appear accidentally.
- When *curriculum* is planned, it is usually expected to be presented as a sequence of educational environments, according to an educational plan.
- It is possible to plan educational environments only partially, as they are heavily influenced by the unforeseen factors.
- Potential learning environments are not designed by educators but emerge from different roles people assume throughout their lives.
- Learners identify personal learning environments by transforming them from potential learning environments and/or educational environments.
- One of the central issues in this transformation is the learning goal set by the learner himself/herself. From the perspective of OL learning it is imperative for students to recognize the necessity to acquire organizational learning capability as learning goal or objective.
- In educational environments, this objective can be stated in the description of the study programme. This would allow students to recognize it as one of their learning objectives with greater facility.
- Although the web-based learning space provides a certain degree of personalization, the fact that the information is available at any point from virtually anywhere, does not make it a personal learning environment.

The above-mentioned relates to the directed and conscious learning on the learner's behalf. This is especially relevant in the case of organizational knowledge construction when employees are expected to display the OL capability. However, even in Nonaka and Takeuchi's (1995) SECI model, it is emphasized that tacit knowledge is generated in the socialization stage. In other words, the learning that occurs in this stage does not occur consciously. Hence, in such or similar cases, one can speak of personal learning environments that emerge spontaneously and are accepted and used by the learner subconsciously. This is particularly visible when affected by various potential learning environments, for instance, in the case of "learning by doing" (Dewey, 1922, 1986) if the learning results are not actualized, accidental learning may occur. This tacit learning quality of individuals is often taken advantage of advertising specialists when secretly persuading people to buy the advertised goods without them realising it.

Therefore, the discussion of educational learning environments and potential learning environments requires an investigation of the learner's involvement in them, which can be formal as well as non-formal and informal and has the meaning similar to formal, non-formal, and informal learning (see Sub-section 1.1.4). However, because educational environments and potential learning environments can overlap, thus shaping the learner's personal learning environments, the question arises, "Are the objectives of formal learning only achieved in formal learning spaces?" A solid answer to this question is "no". Contemporary educational institutions (among them universities) successfully implement APL (accreditation of prior learning) systems that consist of APAL (accreditation of prior accredited learning) and, what is most significant in our case, APEL (accreditation of prior experiential learning) (Burkšaitienė &Šliogerienė, 2010). Hence, institutions of formal education could take advantage of the possibilities of non-formal and informal learning.

As far as possibilities to develop students' OL capability are concerned, the following question requires answering, "Does developing organizational learning capability, considering it one of the components of the study programme's outcomes, have to be attributed to certain courses or modules, or does it have to be identified as a "horizontal" component, which can be included in formal (included into course units), non-formal, and informal learning?" The studied research literature suggests that the best solution lies in the flexible approach which relies on the utilization of various possibilities available at universities, considering the given student contingent.

Organizational learning can be analysed from different perspectives due to its multidisciplinary nature. As discussed in the previous sections, it primarily serves as an object of interest to researchers working in the management area, since the main function of OL is to create new knowledge necessary for organizations (Jucevičienė, 2007), but how can it be incorporated into formal student education?

To provide students with at least the basics of organizational learning, a particular organizational environment has to be simulated. However, this seems to be rather problematic since students have to focus on organizational goals, and, as noted

by Jucevičienė, students rather focus on achieving their learning goals (Jucevičienė, 2015).

1.1.4. Formal, non-formal, and informal learning for the development of the OL capability

People learn everywhere and all the time. Some of education types, however, tend to bear more formal labels while others are considered to be informal (Tudor, 2013). Therefore, learning can be classified into formal, non-formal, and informal, based on the type of setting it takes place in. Smith (2002) explained non-formal learning as "any organised educational activity outside the established formal system – whether operating separately or as an important feature of some broader activity – that is intended to serve identifiable learning clienteles and learning objectives". Informal learning is defined by Smith (2002) as "a truly lifelong process whereby every individual acquires attitudes, values, skills and knowledge from daily experience and educative influences and resources in his or her environment – from family and neighbours, from work and play, from the marketplace, library and mass media", as opposed to the non-formal learning, which is a more organized activity. Furthermore, it is important to distinguish that non-formal learning, as opposed to informal learning, can have an educational objective and often takes place at the learner's initiative. Such a type of learning may often occur as a by-product of other activities (OECD, 2010). It is important that non-formal learning is related to non-formal education. However, informal learning is not identified with education; it is rooted in the activities of the individual and these activities can be deliberate or incidental.

CEDEFOP (2014) and the OECD (2010) give the following definition of formal, non-formal, and informal learning:

- Formal learning consists of learning that occurs within an organised and structured context (formal education) and that is designed as learning. It may lead to a formal recognition of the results (diploma). Formal learning is intentional from the learner's perspective.
- Non-formal learning consists of learning embedded in planned activities that are not explicitly designated as learning, but which contain an important learning element. Non-formal learning is intentional from the learner's point of view. Sometimes the non-formal learning may lead to some recognition of the results (e.g. certificates).
- Informal learning is defined as learning resulting from daily life activities related to work, family, or leisure. It is often referred to as experiential learning and can to a certain degree be understood as accidental learning. Informal learning may be intentional but, in most cases, it is non-intentional (or "incidental"/random).

Interestingly, Tudor (2013) maintained that learning in informal settings is highly beneficial to learners as it helps bridge the educational content to issues that matter to students in life. It seems reasonable to argue that the same can be true to non-formal learning, provided it is organized to solve specific problems that arise in real life contexts, e.g. special training is given to employees to help them deal with problems at work. The author noticed the significance of the relationship between the

formal and non-formal learning, where the latter enriched classroom activities with experiences from real life and, on the other hand, the non-formal learning was deepened by adding questions and knowledge from the classroom (Tudor, 2013). The use of the term informal in the cases described by Tudor (2013) and others would contradict the definition of informal learning presented above as in the case with their study the authors referred to activities for students that are based on the teachers instructions (clear implication at learning objective) but take place outside of the formal education institutions.

Authors investigating learning in different settings are more "unified" when it comes to describing formal learning. However, the opinions are rather different when it comes to defining non-formal and informal learning. Researchers agree that this type of learning takes place in non-formal environments that are not related to formal education. It is agreeable that students can achieve learning objectives relevant for them in different ways: formal (intended in the study programmes) and non-formal or informal (utilizing their own possibilities).

Based on the analysed literature (Bohlinger et al., 2016; Tudor, 2013; Smith, 2002):

- Formal learning can be described as taking place in an organized and structured environment, i.e. not only does it have a specifically dedicated learning space and offers support for learners, it is also characterized by learning objectives that are directed at a specific group of learners and have to be accomplished within a certain time limit. It leads to qualification (a certificate) and is intentionally pursued by the learner.
- Non-formal learning is similar to formal learning in certain aspects, e.g. the notion refers to planned activities, which are also characterised by the learning objective and a specific amount of tine given to achieve this objective. It does not necessarily take place in a setting that is specifically dedicated to learning nor does it have to necessarily lead to a certificate (though in many cases it does). It is still an intentional activity from the learner's point of view, and it involves various ways of supporting the learners in their endeavours.
- Informal learning is not organized. Formally, it has no set learning objective or a time limit to achieve that objective. It occurs in various settings that are not necessarily designed for the learning purposes. As it is not organized, there is no support for the learners and it does not lead to qualification, unless additional measures are taken (cf. it is acknowledged through an APEL system). In many cases, it is not intentional by the user (see the following sections for more details), but it is highly contextual, i.e. it occurs in various contexts (work, extra-curricular activities), which may lead to understanding how theoretical knowledge works in practice.

Before continuing to discuss informal learning in greater detail, it is worth mentioning one peculiarity of formal learning. Formal learning, especially formal education, and even more so HE is as good as its takeaways. In education, these are referred to as learning outcomes (LO). One can think of them as a universal language that is used to describe study programs by the European universities. LOs are statements of what students should know and be able to do as a result of the learning

process (Morss & Murray, 2005; Jenkins & Unwin, 2001). European Qualifications Framework (EQF, 2018) describes a learning outcome as a statement of what a learner (a) knows, (b) understands, and (c) is able to do upon completion of a learning process.

According to the Bologna Process (1999), universities should develop study programs based on LOs. It is, therefore, interesting to see whether the investigated study programs communicate the LOs, and whether this include OL as one of them.

Informal learning, quite literary, surrounds people in their everyday life. It is learning everywhere and always, a truly lifelong-learning process. As such, it deserves some closer investigation.

Nature of informal learning. According to Paurienė (2017), one of the main problems when defining IL is the use of the term synonymously to self-directed learning, accidental learning, situational learning, implicit learning, and other forms of learning. As a rule, the definition of IL is rather "dynamic", i.e. different researchers investigating different aspects of the phenomenon complement it with new elements (Eraut, 2000; Watkins & Marsick, 2001; Dohmen, 2001; Gnahs, 2007; Foley, 2007; Jucevičienė, 2007). Eraut (2000), Kirchhofer (2004), Paurienė (2017), and other researchers argue that the rationale for IL is in experiential learning. Paurienė (2017) claims that through the transfer of daily process into professional activities as well as the analysis of the learning processes in the professional environment, the relationships of IL with not only experiential but also reflexive learning emerge.

It is important to mention that informal learning (IL) is often defined in contrast with formal learning (see, for instance, Eraut, 2004; Marsick & Volpe, 1999). However, in this dissertation the author proceeds from the assumption that informal learning and formal learning should not be dichotomized as it is the combination of the two that, to a large extent, determines the way we learn throughout our lives. Such an approach to informal learning is shared by a number of researchers (Malcolm, Hodkinson and Colley, 2003; Sawchuk, 2008; Grosemans et al., 2015).

The very notion of informal learning has been investigated by numerous researchers and is, therefore, often seen from different standpoints. It is worth mentioning Freire's (2018) ideas who viewed informal learning as rooted in community-based education and focused on the significance of collaboration and knowledge sharing with the least powerful in the society, so that they may gain more autonomy. This is particularly true for the contemporary economical context in late-comer countries, such as Lithuania, where those members of society who have the access to knowledge and particular skills (mostly IT-related skills) have well-paid jobs and those without such skills do not. Eraut (2004) refers to informal learning as a process that recognizes the social significance of learning from other people but requires more individual effort than socialization. The author argues that IL revolves around the learning that takes place in the spaces surrounding activities with a formal purpose other than learning and takes place in a more diverse selection of settings than formal education (Eraut, 2004).

From the definitions above we can distinguish some features of IL, for instance Fraire's (1993) observations about the IL suggest that it can be not only individual, but also collaborative, whereas Eraut's (2004) ideas point out to the out-of-the-

classroom nature of the IL, i.e. it emerges in the situations that were not specially designed for learning purposes (such as daily activities or work routines). Interestingly, Marsick and Volpe (1999) also noticed the lack of predetermined learning outcomes in case of IL, which implies that it occurs spontaneously rather than deliberately (Marsick & Volpe, 1999), thus, it is regarded as implicit rather than explicit.

Marsick and Watkins (1997) conceptualized IL according to four organizing principles: (1) context: learning that occurs outside of classroom-based formal educational settings; (2) cognisance: intentional/incidental learning; (3) experiential: practice and judgement; and (4) relationship: learning through mentoring and team working.

However, probably the most comprehensive analysis of IL features was presented by Malcolm, Hodkinson and Colley (2003). The authors distinguished four attributes of informality/formality: "process, location and setting, purposes, content" (Malcolm et al., 2003, pp. 4–5). According to Malcom et al. (2003), the "process" of IL is often characterized as being incidental and related to everyday activities. Furthermore, IL is rather student-led, democratic, and negotiated in its nature. In IL the role of a pedagogue can be assumed by a friend or a colleague. In truly informal settings, learner's performance is not deliberately assessed by a professional, although in some cases there might be some negotiated form of assessment (feedback provided by the pedagogue). As far as the "location and setting" are concerned, the authors claim that IL occurs in settings that were not intentionally designed for educational purposes (e.g. workplace, community, family). It is also important to mention that the setting for IL is described as open-ended, having few time restrictions, no curriculum to guide the process, and no external certification. In other words, the situation where learning occurs was not deliberately designed by someone "from the outside", hence, it is the responsibility of the learner to initiate learning. The "content", or what is being learned/developed, in the case of IL may revolve around learning a new skill as well as improving everyday practices or developing workplace competences (Malcolm et al., 2003).

To sum up the brief discussion on informal learning, it can be noted that different approaches to IL give rise to various interpretations of the phenomenon. However, all discussed authors seem to distinguish certain features of IL. These features also seem to match with the ones distinguished by Paurienė (2017), who claimed that there is no common approach to the concept of IL. At the same time, it is necessary to realize that the nature of learning as such is neither formal, non-formal, or informal, but it can be described based on the features of the environment where it occurs, the pedagogical intent, and the learners degree of intentionality (Paurienė, 2017). Paurienė (2017) also claims that IL is the continuum between uncurious incidental learning and the self-directed learning, between implicit and explicit learning.

1.2. Factors of the development of the organizational learning capability in formal learning

It is obvious that education as a system has undergone a number of changes over the course of the last few decades. These changes were influenced by advances in

various areas such as science, economics, technologies, etc. Higher education (HE) institutions are now seen as global producers and disseminators of knowledge, which is now considered to be one of the indicators determining wealth of nations (Taylor et al., 2008). The efficiency of knowledge creation and dissemination at universities (as well as other education institutions) depends on various aspects. One of such aspects is the university curriculum.

1.2.1. A new approach to the curriculum: extending the possibilities for developing organizational learning capability through formal learning

Looking for a new approach to the curriculum. There are many definitions for the term *curriculum*. Kalantzis and Cope (2012) define a curriculum in a general sense, stating that it is a design of programmes and courses of study. Such definition, despite being very clear, may be too narrow for the discussion proposed in this dissertation.

On the other hand, a much wider definition is proposed by Niculescu (2015), where a curriculum is defined as "the totality of learning situations connected to the subsequent learning experiences which occur during a human being's life". The author explains that the learning situations may occur in three different setting: (1) *formal* – specifically designed and implemented within formal situations, (2) *non-formal* – specifically designed in non-formal situations, and (3) *informal* – learning situations occurring in life with no pre-planning involved but with definite learning outcomes. Niculescu and Norel (2013) argued that curriculum can also be discussed looking at how real it is. Therefore, the author distinguished between the *ideal curriculum* and the *real curriculum*. Niculescu and Norel (2013) see the ideal curriculum as a pre-planned entity that includes both formal and non-formal curriculum. The real curriculum is defined as the sum of experiences acquired by the learner (Niculescu & Norel, 2013). In the context of this dissertation, the notions of the ideal curriculum and the real curriculum suggested by Niculescu and Norel (2013) are referred to as a *pedagogical system* and *educational environments* (Jucevičienė, 2010, 2013) that are used to implement the pedagogical system. One of few differences between the concepts is that the notion of the real curriculum does not include the randomly occurring elements that may hinder its implementation.

Darling-Hammond and Bransford (2005) presented the curriculum typology where curriculum is seen by the authors from several different perspectives. The authors distinguish the (1) *formal curriculum* – the topics and concepts to be taught, (2) *the enacted curriculum* – the curriculum that actually occurs in the materials, activities and assignments selected by the teachers and within the interactions between the teachers and students, and (3) *the hidden curriculum* – the curriculum that tacitly implements the goals and perceptions that schools and teachers hold for students individually and as a group (Darling-Hammond & Bransford,2005).

Pollard (2011) distinguishes four types of the curriculum: (1) *official curriculum* – defines as planned education programme, (2) *hidden curriculum* – all that is not included into the official curriculum but is taught at education institutions through interaction with teachers and peers (attitudes, beliefs, etc.), (3) *observed curriculum* – the curriculum that is actually implemented in the classroom. It can both resemble and

be different from the official curriculum; (4) *the experienced curriculum* – includes the learner's actual experience and covers both the official and the hidden curriculum. This curriculum displays the results of educational impact on the learner.

Attempting to define a *curriculum*, Kelly (2009) distinguished its multifaceted nature. The author distinguished several types of the curriculum: (1) *educational curriculum* – a curriculum that reflects the values of a democratic society and excludes the values that are opposite to the latter. Furthermore, the author noticed that the educational curriculum is difficult to harmonize with vocational elements that are often included into it by different educational institutions, as these tend to diminish the educational component (Kelly, 2009); (2) *the total curriculum* – the curriculum that stresses the holistic approach to education, (3) *the hidden curriculum* – refers to what students learn at educational institutions not because it has been officially planned but due to the way in which the work of the school is organized. Learning can also occur through the resources (provided by the educator), using them in ways which were not planned or consciously designed by those involved in curriculum design or planning (Kelly, 2009), (4) *the planned curriculum and the received curriculum* – similarly to Pollard's (2011) notion of the official and observed curriculum, Kelly (2009) dichotomises the officially planned curriculum and student's experience, which can differ from person to person; (5) *the formal and the informal curriculum* – where formal curriculum is described as formally planned activities that have a particular slot in the timetable. The informal curriculum is defined by the author as occurring on voluntary basis, at lunch-times, after school hours, at weekends or during holidays and are often referred to as extracurricular activities (Kelly, 2009).

Monkevičienė, Žemgulienė, and Stankevičienė (2013) maintained that Lithuanian researchers and education professionals use the terms *intended curriculum* and *attained curriculum*. Where the *intended curriculum* is seen as equivalent to the notions of Pollard's (2011) *official curriculum*, Kelly's (2009) *planned curriculum* and Darling-Hammond and Bransford's (2005) *formal curriculum*. Whereas the *attained curriculum* is considered to be similar to the notions of Pollard's (2011) *experienced curriculum*, Kelly's (2009) *received curriculum* and Niculescu's (2015) *real curriculum* (Monkevičienė, et al., 2013). Within the framework of the theory of educational and learning environments (Jucevičienė, 2013), such notion of the curriculum would be similar to the notion of the educational environment. The authors have also distinguished the notion of the *implemented curriculum* which consisted of the *observed curriculum* distinguished by Pollard (2011) and the *hidden curriculum* which was discussed by most of the abovementioned authors.

All notions of the curriculum conceptualized by the presented authors are generally correct but may approach the learning from slightly different perspectives. In this dissertation we shall consider that students are educated within a pedagogical system that is described as an ideal curriculum (Niculescu & Norel, 2013). This system is implemented through educational environments or what Niculescu and Norel (2013) refers to as a real curriculum. However, apart from their participation in formal education activities, students are also engaged in other activities both on and off campus. In all these settings, whether formal, non-formal, or informal, students

are also influenced by various "effects" that were not intended in the formally designed curriculum, e.g., attitudes to specific issues, etc. These can be referred to as a hidden curriculum. This hidden curriculum may be situated in organizations where students learn through interaction with members of the group or the entire organization. Within the theoretical framework of educational and potential learning environments, this hidden curriculum could be referred to as a potential learning environment.

In this dissertation, the author proceeds from Pollard's (2011) assumption that if the official and the hidden curriculum meets the learner's needs, his/her experienced curriculum shall be the widest and shall match the planned curriculum the most. The experienced curriculum is the real result of the educational activities (Pollard, 2011). We shall consider Niculescu's (2015) informal curriculum as a part of the hidden curriculum notion due to the fact that it is not pre-planned.

Challenges of developing OL in the formal curriculum

OL learning is possible only within organizations, but where can a student be involved in a real organization without leaving the campus? How can OL be include in the formal curriculum? Organizational learning takes place within organizations at the individual and collective level (Jucevičienė 2007). According to Nonaka (1994), organizational learning is related to generating organizational knowledge necessary for organizations to tackle the emerging challenges and improve their performance. Therefore, organizational learning requires the members of a particular organization to contribute to the knowledge pool of the organization thus helping it to pursue the established goals.

For university graduates starting their careers in the organizations to be able to contribute to the creation of organizational knowledge, they would have to acquire organizational learning skills at university. The problem, as noted by Jucevičienė and Valinevičienė (2015), lies in attempting to put students into real organizations. This issue presents a great challenge to universities. The ways to overcome it have to be reflected in the university curriculum.

At the very least, the **formal curriculum** should reflect the possibilities for student organizational learning in the study process through:

- **what is reflected in the objectives and learning outcomes,**
- **syllabi (themes), and**
- **forms of studies, methods, other day-to-day activities taking place at the university.**

Such possibilities for organizational learning arising from the university activities should be clearly documented in the descriptions of the study programmes as learning outcomes (as required by the *Bologna Process* and related communiques). Caspersen, Frølich, and Muller (2017) seem to suggest that the role of HE learning outcomes in the core activities of higher education (teaching, assessment, and learning) stretches beyond the significance for the HE institution itself and has to be regarded in a broader context (political, societal). It is the role of HE learning outcomes to provide stronger links between the core activities, the labour market, and

wider society (Caspersen et al., 2017). Hence, the fact that OL is presented as one of the programs LO is an important factor influencing the development of students' OL.

Student internships play a significant role as they allow students to get immersed in the organization's activities. Numerous authors have studied the role of student internships on the students' performance in on-campus activities and their professional activities. For instance, Chouinard (1993) investigated the impact the internships had on the learning outcomes of a particular study programme. Katula and Threnhauser (1999) stated that the purpose of the internship was twofold: to provide students with understanding organizational structures and to protocol within the professional working environment and with an opportunity for professional development. Hynie et al. (2011) supports the ideas of Katula and Threnhauser (1999). Hurst and Good (2010) noticed that internships were of value to the student, employer, and university. Hergert (2011) maintained that internships played a critical part in allowing students to connect traditional classroom activities and the workplace. Hergert (2011) stressed the relevance of teaching instructions to maximize the effects of internships. The author found that the significance of internships could be significantly enhanced if educators provided an appropriate structure and integrated internship experience with student academic background (Hergert, 2011).

It should be noted that students may choose to enrol in internships that have not been included in the study programme. Such internships go beyond the formal curriculum (e.g., summer placements in companies). Student internships also pose certain doubts, "Does it ensure the possibility for students to develop organizational learning skills?" It is true that student internships represent the most popular form of studies, which enables a student to work in real organizations. During the internship, students are given the possibility of getting involved in a certain extent of organizational activities. Thus, it is possible that the students of business and management study programmes are involved in the creation of organizational knowledge, and consequently in organizational learning during their internships. However, can the same be expected of student internships in other study programmes (e.g., engineering, medicine)? It should be noted that student internships are usually aimed at more profound insights into the application of subject-specific knowledge in work practice mastering different technologies related to it rather than going deeper into the managerial and organizational aspects of the organization.

Long-term placements, on the other hand, are more reliable. The so-called *sandwich courses* serve an excellent example of long-term placements and its significance to the curriculum; such practices are successfully implemented at universities in England. The characteristic feature of such programmes was that they included a substantial work placement that often lasted as long as a year (Mason et al. 2003). Wilton (2012) maintained that such placements were considered to be a significant asset for the graduates entering the labour market, i.e., compared to their peers having no placements, sandwich students were advantaged in most study areas, including business, management, and finance in the labour market.

Wilson (2012) also revealed the limitations of sandwich degrees were imposed by the barriers that deterred students from choosing such placements. According to

the author, these barriers included: (a) time pressures of application, (b) uncertainty in securing a placement, (c) intense pressure of a peer group to opt out, (d) difficulties in finding a placement close to the university or parents' home (Wilson, 2012). However, Wilson (2012) pointed out that some universities were successful at ensuring the satisfaction of the majority of students regarding their sandwich placements. Wilson (2012) concluded that sustaining a sandwich course structure in university degrees depended on the university culture, strategy, and course portfolio. Therefore, even though long-term internships are significant, there seem to be no contributions describing how to employ them, thus, to develop skills of organizational learning.

Teaching/learning methods cover teacher and student activities based on mutual interaction when a teacher creates educational conditions for a student/s in order to achieve the set objectives, whereas students select learning activities suggested by the teacher and the ways of learning matching their needs. To achieve the set objectives, several interrelated teaching/learning methods are usually applied. The sequence of these methods is predetermined by the teacher or can be described in the educational research literature. In such a case, one can speak of a teaching/learning (educational) model. In terms of organizational learning, the teaching/learning model is emphasized, as the educational power and duration of a single moment is usually too insignificant to considerably develop organizational learning skills.

From the discussion above it becomes evident that the conditions for students' OL have to be imbedded in the university curriculum. The factors that contribute to the empowering student OL in university curriculum (or, as referred to by authors, "educational environment") have been described by Jucevičienė and Valinevičienė (2014) and presented in a detailed manner in the doctoral thesis prepared by Valinevičienė (2017). The author distinguished between the internal and external factors that empower student organizational learning (Valinevičienė, 2017). The external factors included: national policies regulating the level of university autonomy, prevailing organizational culture model within the country, and the dominant educational paradigm adopted by the university. The internal factors, on the other hand, focused on the role of the teacher as the one who empowers students, the competence of the teacher to create the conditions that empower students' OL, the competence of students.

As far as the study process is concerned, it is also worth noticing that OL skills can be developed through particular teaching/learning methods and models (e.g. project-based learning). Finally, an organizational learning development model EDENSOL (Jucevičienė & Valinevičienė 2015) was also developed, empirically tested; the results were presented in Valinevičienė's dissertation (2017). The factors determining students' formal organizational learning were the cornerstones for developing this model. EDENSOL model is a complex sequence of special educational environments that can be included in university courses and used for developing student OL skills. All these measures are undoubtfully useful and their efficiency is documented in scholarly literature. However, implementing these measures in the study process might prove difficult. Since organizational learning

occurs within organizations, it is important to simulate the kind of environment that resembles a real organization. Which means that first and foremost students, as members of such organization, are expected to prioritize the organizational goals over their personal learning goals.

EDENSOL as an organizational learning development model. The model was developed by Jucevičienė and Valinevičienė (2015) to simulate an organization in the study process, which was aimed at solving real-life problems by applying organizational learning. The validity of this theoretical model was verified in practice in the courses delivered at Kaunas University of Technology.

The researchers have based the EDENSOL model on the theory of educational environments (Jucevičienė, 2013) and the organizational learning SECI model, supplemented with organizational learning environments "Ba" and knowledge assets (Nonaka et al., 2000). The authors have chosen the EDENSOL acronym, which became the name of the model, as the model highlights educational environments (EDucational ENvironments) that empower student organizational learning (Student Organizational Learning). Jucevičienė and Valinevičienė (2015) proceeded from the assumption of Von Krogh et al. (2000) that the environments assigned to the stages of creating organizational knowledge ("ba") had to be enabled through organizational activities. The researchers noticed that the concept of "ba" had a number of similarities with that of learning and educational environments and were empowered through the same factors (Jucevičienė & Valinevičienė, 2015).

The essence of EDENSOL:

1. A three-dimensional objective is set and presented to students along with appropriate learning outcomes:

a) *to acquire/develop particular subject-specific/interdisciplinary knowledge and skills.* For example, since the EDENSOL model was implemented in Master of Education study programme in "Learning in Knowledge and Information Society" course unit, it was aimed at developing skills of the construction of educational roots in particular place. Usually, the *subject-specific/interdisciplinary* knowledge and skills objectives are presented first since organizational learning skills are most often developed as horizontal ones;

b) *to acquire/develop organizational learning knowledge and skills necessary for problem solving*. While presenting this objective, it is necessary to explain that students will have to complete a task which is a real problem and to solve it an organization. At the foundation of such an organization lies creative activities, thus, organizational knowledge is constructed on a regular basis and organizational learning inevitably takes place;

c) *to practice and develop service-learning skills* while solving a problem relevant to society. This aspect of social relevance and even the feeling of social responsibility is necessary to provide greater motivational force to student's activities and learning. Therefore, the provided problem-solving task has to be relevant to a particular group (or groups) in the society in such a way that the group (or groups) would be interested in its solution. Application of the design

thinking approach is desirable as it would create a fitting result for the particular group (or groups) of the society.

It becomes evident that the theoretical foundation for such a three-dimensional objective is the cubic curriculum (Wragg & Joseph, 1997).

2. Students are provided with a study assignment.

The study task which requires organizational learning has not only to match the requirements for a three-dimensional study task. It has to be designed in such a way which would presume steady social interaction among students, motivate them to reach the common goal, and construct shared collective knowledge. Thus, the task has to be designed is such a way that it could be completed only by an organization rather than an individual student or a small group of students. Since a real-life socially relevant problem is tackled, PBL and project-based learning are required. Students are asked to create an organization that has a leader and departments (in this case, groups of students; 4–6 students in each group). The task was possible to accomplish only if the organization has been working successfully.

3. Teacher's organizational and methodical support to students.

First of all, the teacher has to justify the necessity for forming and consisting of several departments (the departments consist of students carrying out the task) as well as explain why the constant coordination between the departments is necessary and why there is a need for the organization and department's leaders. Students are encouraged to model the organization that is capable of solving the presented problem themselves. The teacher or a team of teachers are assigned a consulting role. The created organization follows the project management organizational structure and its culture has to be based on the collaboration principle (Jucevičienė & Vizgirdaitė, 2012) as well as the empowering transformative leadership style has to prevail. The organization has to be perceived by students as a social unit which operates to achieve the set aims, was deliberately created as the structure of activities, and is related to the external environment (Kirst-Ashman & Hull, 2015). Conditions for collegial organizational behaviour are created: students as acting members of organization are given the liberty of decisions and responsibility for the results. When such a model of organization is designed and approved, students engage in a discussion to choose their roles.

The teacher carries our organizational and educational activities both while creating the organization and preparing it for activities. The problem-based task, PBL, principles of project-based learning, the problem-solving context as well as people (representatives of the society) and students have to cooperate in order to complete the presented assignment. The teacher devotes a lot of attention to presenting organizational learning as a condition imperative for constructing organizational knowledge necessary for achieving organizational aims. The organizational learning, as a spiral of knowledge creation necessary for the implementation of the task, is presented to students as well as principles of organizational learning and the stages of socialization, externalization, combination, and internalization (Nonaka, 1994), and peculiarities of learners' activities to be implemented in the problem-solving process.

The teacher provides continuous support to students in terms of consultations, especially as they design the solution for the problem.

4. Learning outcomes and their assessment.

Three learning outcomes are analysed:

a) as a result of completion of a task/project (solution of a provided problem) it is assessed by members of the society. It is imperative that the acquired socially valuable result—solved socially significant problem—is presented to the stakeholders by students as an organization. Students should be informed of such presentation upon being introduced to the task. The experiment conducted by the authors of the model revealed that such awareness serves as a major motivational factor for the organizational learning to occur;

b) student's contribution toward achieving the organizational goal is assessed by his/her peers;

c) organizational learning and subject-specific competencies developed by the student are assessed by the teacher, considering the assessments (a) and (b).

Assessing the OL capability can be particularly problematic. Education researchers generally distinguish between two types of assessment: summative and formative (cf. Raudienė, 2018). Dixson and Worrell (2016) claim that the aim of the summative assessment is to assess the achieved learning outcomes by applying formal criteria and measures. As a rule, formative assessment is carried out at the final stages of a particular stage in the study process and bears great significance to the learner who is being assessed (Dixson & Worrell, 2016). Summative assessment has particularly been in the spotlight in the wake of mass HE and standardisation (The Bologna Process), in particular for the sake of assuring quality of studies (Lau, 2016). Formative assessment, on the other hand, facilitates learners' personal development in the pursuit of the intended learning outcomes (ILOs). It employs means, such as feedback, sharing success stories, peer assessment, or self-assessment (Buchholtz et al., 2018). However, Ellis (2013) notes that formative assessment has been introduced in the study process gradually due to certain drawbacks that are characteristic of this type of assessment. For instance, when lectures or workshops commence in the classroom setting, it is difficult to keep track of the student progress (especially true for large student groups). In such cases, formative assessment requires special tools. For students who are involved in organization's activities as members of one of its departments, formative assessment may be particularly valuable.

Hence, the sequence of educational environments for student empowerment for organizational learning consists of a problem-based task design and involvement of students into the solution of the task through organizational learning. Students break the problem down, foresee alternative ways of solving the problem, justify the best solution for the problem, and plan their activities and resources necessary for the solution. All of these activities take place as students participate in an organization where they are divided into departments/project teams. It is also important to appoint team leaders and foresee other necessary functions and environments for knowledge sharing. Social stakeholders (i.e. external organizations) should be involved in the process to motivate students to solve the problem. A teacher or a team of teachers

carry out the role of coordinators and consultants. In this way, a student organization, which is involved in problem solving and prepares a joint project, is created as a platform for organizational learning.

Formal teaching/learning can have a certain "invisible" component of learning, as a certain latent (hidden) curriculum is likely to be implemented along the formal curriculum. University that is able to recognize this fact could take advantage of the possibilities offered by this "hidden curriculum".

The EDENSOL model is no doubt valuable as it allows students to experience the organizational learning in the formal study process. On one hand, students participate in the activities of simulated organizations as well as in organizational learning processes and begin to acquire initial understanding of how organizations learn. On the other hand, study programmes acquire "added value" as the course units/modules, which engage students in organizational learning, contribute not only to the subject matter knowledge and skills, but also allow students building up their organizational competence. However, the authors of the model (Jucevičienė & Valinevičienė, 2015) noticed that it had some limitations.

Universities devote much attention to problem-solving studies. Upon reviewing numerous contributions dedicated to problem-based learning at universities, Thomas (2000) highlighted the interaction of teacher-student activities as a complex system. Applying the right methods is not enough to master such activities, because a model is needed; project-based learning (PBL) is a model that organizes learning around projects (Thomas, 2022, p. 1).

The PBL curriculum model also provides vast possibilities for organizational learning. Aalborg University offers students the kind of university experience where they work in closely-knit groups engaged in problem-based project work. Arguably, while the group work at Aalborg university is successful, it is limited to groups and does not expand to the level of the organization as an entity. The manner of work where students perform in close collaboration to tackle real-life problems is often referred to as participant-directed learning in the Danish tradition and is similar to what education researchers often refer to as the social learning theory (Kolmos et al., 2004). The descriptions of study programmes on the Aalborg university website revealed that students often worked in small groups. According to Kolmos et al. (2004), the traditional learning model at Aalborg University is based on problem-based project work in which approximately half of students' time is devoted to projects. However, even in such approaches as the one practiced at Aalborg university, the OL capability is not developed on the scale of the organization and is limited to pursuing goals of the team and creation of organizational knowledge on the scale of the project group.

Furthermore, some study programmes at Aalborg University have remarkably close cooperation with the industry. For instance, students enrolled in Economics and Business Administration Bachelor's degree study programme have an integrated company project in their third year of studies. Students are tasked with identifying real-life problems the companies face in their day-to-day activities and with implementing a multidisciplinary approach to solve these problems.

Having recognized undoubtedly valuable practical implementation of the PBL model at Aalborg University and research on it, it must be admitted that no sources dedicated to PBL for learning organizational learning were discovered. Many projects carried out by students at Aalborg university employ what is referred to as *Agile curriculum* (Stewart et al., 2009). The limitations of the Aalborg model are that the OL does not cover all four stages of knowledge creation, as the learning is limited to a group level (Socialization and Externalization phases of the SECI model).

The analysis of the possibilities for developing students' OL capability through a formal curriculum raised the question as to whether universities fostering a traditional view to curriculum can hope to take and make the most of it when it comes to developing students' OL capability. Such a challenge may well prove to be a problem, but not because the university lacks competence or organizational capability to do so, but rather because the traditional setting of the university is designed with certain presumptions about the students and studying. Willeke (2011) argues that, traditionally, education, especially HE, is designed for a particular target audience and has certain assumptions about this audience; students within a certain age range with the financial capability that allow them to focus on studies essentially in an environment that is self-sustaining without the added expectations of family and career (Willeke, 2011). This may also mean that those students who have roles in real-world organizations may find it difficult or less motivating to be involved in simulated organizations. One of the possibilities to facilitate the development of the OL capability for such students is to foster agile approach in the university curriculum. Agile methodology is typically employed in the software development practices but has recently become more prominent in education as well (Nicolettou & Soulis, 2014; Willeke, 2011; Parsons & McCallum, 2019; Salza et al., 2019). The distinctive feature of Agile methodology is that it emphasises the human factor and highlights the focus on the individual talents and skills. Agile enables extreme collaboration through outstanding communication and interaction while using combined individual talents in teams to reach the common goals efficiently (Cockburn & Highsmith, 2001). It is likely that it may have a positive impact on the development of students' OL capability in formal learning. Agile in education encompasses a comprehensive approach to PBL. Fowler and Highsmith (2001) announced the Agile Manifesto explaining the main features of the Agile software development as follows:

- Individuals and interactions over processes and tools;
- Working software over comprehensive documentation;
- Customer collaboration over contract negotiation;
- Responding to change over following a plan (Fowler & Highsmith, 2001).

Stewart et al. (2009) suggested that these features could be integrated into the classroom setting. According to the authors (2009), such integration may assume the following form:

- Individuals and interactions over processes and tools → students over traditional processes and tools;
- Working software over comprehensive documentation → working projects over comprehensive documentation;

• Customer collaboration over contract negotiation → student and instructor collaboration over rigid course syllabi;

• Responding to change over following a plan → responding to feedback rather than following a plan (based on Stewart et al., 2009).

The Agile curriculum can involve a number of techniques that are used in the software development and management, for example, lean, scrum and many other depending on the type of the project students are working on.

A rather new development in learning—application of the **design thinking** methodology—is one example of application of the agile curriculum. The idea behind the design thinking is to involve students in the development of innovations and that these innovations need to be relevant and useful as well as built on the needs of users and other stakeholders is central for design thinking (Johansson-Sköldberg et al., 2013). The design thinking process consists of five steps:

1. *Empathizing*. Students aim to understand the needs of users and those who are involved.

2. *Defining* the problem involves synthesizing the findings to determine the specific problem to be solved.

3. *Ideation*. Students come up with a number of possible ideas; in this step, quantity prevails over quality.

4. *Prototyping*. Students select ideas and develop them into prototypes.

5. *Testing*. Students tried to finalize solutions, which could be implemented in the real-world problem.

The abovementioned pedagogical approaches might be useful for developing student's OL. The results of the empirical research of the implementation of EDENSOL model revealed that students' OL in an organization is hindered by the lack of relationships between the departments or rather the competitive mode in which students approach their tasks. In order for OL to take place, organizational knowledge has to be constructed not only on the individual or group level but also on the organization level. Moreover, it is necessary for students to be involved in the activities of the real or simulated organization. On the contrary, PBL designed as the agile curriculum, design thinking, and similar designs are developed for a small group rather than an organization. Hence, to achieve student's OL, tested didactic systems have to be employed. Several models have been tested empirically and one of them is the EDENSOL method. It is also worth noticing that it is not a method but rather a didactic system which has to be described in the formal curriculum.

1.2.2. Factors of the development of university students' organizational learning capability reflected in the curriculum

Having discussed the possibility to include OL into the formal curriculum, it is now possible to distinguish certain factors that impact student OL at universities on the level of the formal curriculum. It is worth mentioning that if individual factors come into play, they are unlikely to influence organizational learning as such. They are likely to influence some components of OL, for instance, group learning or collaboration (Leščinskij, 2018) but not OL as a whole. Thus, the factors presented below have to be investigated as a system. As mentioned in previous sections, OL is

considered to be learning that is necessary to achieve organization's goals. It takes place on an individual and two collective levels (group and organization).

The factors discussed in this part can be divided into two categories: (1) factors that come into play when a task requiring OL is given to students in one of the modules at the university, and (2) factors that come into play when a task requiring OL is given to students in the internship module.

The factors that apply for the first category of tasks are going to be discussed first. Therefore, if we are to achieve adequate organizational learning, it is necessary to apply a didactic system that incorporates a system of factors, such as the EDENSOL model.

The first and the most significant factor is formulated as following: **F1:** ***Educational environments that employ special didactic systems (which simulate organizations) are created.*** Moreover, the OL knowledge/capability/competence can be developed when a task requiring OL is given to students in one of the modules at the university (where organization is most likely simulated), if the following factors of formal teaching/learning are in play (based on Jucevičienė, 2013; Jucevičienė & Valinevičienė, 2014; Nonaka, 1994; Nonaka & Takeuchi, 1996; Nonaka & Konno, 1998; Nonaka et al., 2000; Caspersen et al., 2017; Dibella et al., 1996; Chiva et al., 2007; Ozan Onağ et al., 2014).

F2: ***The aims and the learning outcomes of the study program or its module provide for the development of the OL capability***. Generally, this factor can be indicated by two aspects: (1) it is described in the curriculum, and (2) it is known to students (based on Caspersen, et al., 2017).

F3: ***Students understand the simulated organization's goal and pursue it by contributing to the organizational knowledge pool, because they know it is important for practicing OL.*** (cf. Dibella et al., 1996; Chiva et al., 2007; Ozan Onağ et al., 2014).

F4: ***Students have at least some initial knowledge of knowledge-based organizations and how they function (what, how, why, who)***. Students can have this knowledge from other courses; it can be developed through the course or students have it already developed through the work experience in real organizations (Jucevičienė & Valinevičienė, 2014, 2015).

F5: ***Educational environments created within the selected didactic model include environments ("ba") which simulate the knowledge creation modes described in the SECI model (through implementation of the EDENSOL model or similar models).*** Not only methods are meant here; students are involved in collective problem-solving activities in the organization. We can speak of the environments empowered by particular methods that are created to implement the four SECI modes (socialization, externalization, combination, internalization). It can be achieved by assigning students **a task that requires an organization to be established** (**simulated**); the task has to be **solved by the members of the organization together**. **Students** have to **perceive their activities as work in an organization**. This organization needs to have departments (units), and each **student has to feel he/she belongs to the department**. The knowledge assets that are pooled are collected for

accomplishing the task, so students have to be **motivated to create knowledge that helps to reach the organization's goals**. *Socialization*. When students perceive themselves as members of a particular department, they act in it for some time, which allows for tacit knowledge to form within members of the department. *Externalization*. The department has to be involved in decision making that requires new organizational knowledge and this process is successfully implemented. *Combination*. Every once in a while, departments within the organization (student groups) come together to make collective decisions, decide on common rules and attitudes. New rules or reports drafted by several teams within organization shared as a memo on, e.g. company's intranet or distributed as hard copies indicate that the phase of combination has taken place. *Internalization*. The rules that have been introduced to the members of the organization are employed in their activities in such a way that after some time they become the tacit knowledge for members of the organization (students) (Jucevičienė & Valinevičenė, 2014; Nonaka et al., 2000).

F6: ***Assessment of organizational learning*** (based on Buchholtz et al., 2018; Ellis, 2013; Black & Wiliam, 2009). Students receive formal feedback on their achievement in organizational learning. A question remains as to how to assess the success of the OL developing activities if only some of the factors are implemented. This, of course, depends on factors that are being implemented. The factors that directly impact the creation of organizational knowledge are particularly important.

F7: ***Reflection is encouraged***. Students reflect on the learning process to make them aware that they have experienced organizational learning (Nonaka & Konno, 1998).

F8: ***Student internships are designed to facilitate the development of students' OL capability*** (based on Chouinard,1993; Katula & Threnhauser, 1999; Hurst & Good 2010; Hergert, 2011; Nonaka, 1994; Nonaka & Takeuchi, 1996; Nonaka & Konno, 1998; Nonaka et al., 2000, Caspersen et al., 2017).

F9: ***One of the learning outcomes of the internship module foresees the development of the student's OL capability/competence*** (Caspersen et al., 2017).

F10: ***Students understand the aims and learning outcomes related to the development of the OL capability and know how to achieve them*** (Caspersen et al., 2017).

F10: ***Students are involved in the internships in organizations that recognize the importance of organizational learning and in collaboration with the university create environments ("ba") that involve students in the knowledge creation processes (SECI phases)***; (Chiva et al. 2007; Ozan Onağ et al., 2014; Nonaka & Takeuchi, 1995).

F11: ***Students are deliberately involved in the collective problem-solving process at the internship organization to experience OL on the level of the organization as a whole***. The problems that are being solved require collective knowledge and students are engaged in the process of creating such knowledge (Jucevičienė & Valinevičienė, 2014).

F12: ***Students understand the internship organization's goal and pursue it by contributing to the organizational knowledge pool because they know it is important for practicing OL.*** (cf. Dibella et al., 1996; Chiva et al. 2007; Ozan Onağ et al., 2014).

F13: ***Students' learning for the development of the OL capability during the internships is assessed.*** Students receive formal feedback on their performance during the internship. Their organizational knowledge creation effort is assessed. For this purpose, the formative assessment approach is best employed. According to researchers Buchholtz et al. (2018), Ellis (2013), Black and Wiliam (2009), "practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have taken in the absence of the evidence that was elicited" (p. 9).

F14: ***Reflection on students' activities in the internship is encouraged.*** Students reflect on the learning process to make them aware that they have experienced organizational learning (Dewey, 1986; Nonaka & Konno, 1998).

These factors have been heavily impacted by the characteristics of educational environments discussed in the sections above. Consider the following: the educational aim of the educational environment is manifested through the learning outcomes and aims of a study programme or a course. It is impossible to develop or at least implement a didactic system or a particular teaching/learning method that develops the OL competence without experienced educators who foster the understanding of the significance of OL. Finally, learners and their learning capability seem to be more of an individual factor. However, the educational environments discussed in this dissertation (influenced by the university study programme) also impose certain limitations on the learners. For instance, only people with secondary education can be enrolled in these programmes.

Students practice OL with the factors of formal teaching/learning in effect. This OL can be manifested through one, several, or all levels of OL.

1.3. Factors of the development of university students' organizational learning capability through non-formal and informal learning

Generally, simulating an organization (a solution that has been presented in the previous section) can be difficult due to the prevailing competitive mindsets of students. ***So why not to use the already existing, well-established organizations within the university?*** Such as student representation bodies or various clubs.

The 21st century universities are concerned with a task of paramount importance. They have to educate people for the national and international labour markets. At the same time, they have to deal with the limitations imposed by changes in the global situation, i.e., demographic changes in particular countries, reduced government assignations, high expectations (often excessively) of the stakeholders, and so forth. If Newman's (1852) idea of the university was primarily concerned with knowledge sharing through students' interaction with the faculty and participation in the academic life on campus, then the contemporary university aims to expand its network beyond campus. Thus, it forms partnerships with the industry, public institutions, or

individuals in the hope that they can contribute to the quality of the student education or research. This often leads to the introduction of sandwich courses internship possibilities or other forms of cooperation. In return, universities "promise" (e.g., through their mission statements) to educate highly qualified staff for these partners. In this respect, university graduates are expected to display not only their subject knowledge and skills, but also the capability to blend in with contemporary organizations. Students as future employees would surely benefit from the experience in various organizations which include not social stakeholders' companies, but also various student bodies. However, learning in such an organization does not necessarily takes formal character; it is often informal.

1.3.1. Non-formal and informal learning and the hidden curriculum

The activities students are engaged in at the university are not limited to the formal ones. Furthermore, even some formal activities may have elements of non-formal and informal learning. For instance, if a student is involved in OL activities in an organization during the internship that is planned in the formal curriculum but the OL learning outcomes and objectives are not planned, then his/her involvement in these activities cannot be attributed to formal learning. Similarly, when we speak about organizations that purposefully include students into organizational knowledge creation processes, then the same factors as discussed in Subsection 1.2.2 (option 2) come into play. Particular factors might be the same regardless of who involves students into OL. The learning outcome and the objective shall be set by a different entity, either a university or the organizations where students have internships themselves. If neither the university nor the organization set the OL learning objective, but students are involved in OL activities through work in these organizations, then we can speak about informal learning. Thus, two options have been discussed: (1) students are involved into knowledge creation activities explicitly stating the fact and explaining how knowledge creation works but OL is not included among the ILOs or objectives in the university course description (non-formal learning), or (2) students are involved into organization's knowledge creation activities through participation in the organization's work.

Another option for students to get involved into the organization's knowledge creation processes is in their actual jobs as some students are already employed when they take up studies at the university or find employment during their studies. Both latter options refer to students' informal OL. For students to develop their OL capability in their work organization, such an organization needs to create appropriate conditions. In other words, the "ba" to facilitate knowledge conversion needs to be ensured. Unless a given organization has a specific training course designed for fresh recruits, students may develop the OL capability incidentally, without specifically setting such learning goals. Many factors that apply to the deliberately designed educational environments (EDENSOL or other) should come into play in this case as well, with the exception of the progress assessment, students have to rely on reflection rather than formal feedback from the educator.

Student organizations are also an essential part of student's life, as they promote the development of students' interests, talents, and passions. The students admitted to

the university are presented with an opportunity to engage in many different activities, e.g., sport or art clubs or student representation bodies. Learning occurring in various student organizations does not fall under the category of formal learning. In other words, students do not join these organizations as a part of their formal curriculum. Such organizations, however, may still serve as a valuable learning platform for the development of many valuable skills and capability.

Student representation bodies are voluntary organizations that are, as a rule, tasked with developing a loyal body of students dedicated to improving the quality of HE as well as an overall studying experience. At the same time they have all the features of contemporary organizations, which according to Kirst-Ashman and Hull (2014) are as follows: (a) it is a social entity that (b) has goals, (c) is deliberately structured as a sequence of activities, and (d) is related to the outside world. Therefore, yet another question to be answered in the dissertation is how to transform the potential learning environments existing in the student representation bodies into educational environments that empower student's organizational learning. In this dissertation, the author takes advantage of the concepts of empowerment developed by Freire (2018) and educational empowerment developed by Jucevičienė (2010) and Vizgirdaitė (2013). Thus, student empowerment is considered to take place when the following conditions are met. First, the power is shared with the learners and they have the right to make decisions and control their learning. Second, the educator and students can perform successfully during the learning process (they are competent), and learning is promoted through adequate means while including learners in the learning process (Vizgirdaitė, 2013).

It is entirely possible that students participating in the activities of these organizations also develop various organizational skills, e.g., organizational learning. Learning processes in high-level art groups based on the example of the student choir were studied by Tamušauskaitė (2012) in her dissertation work. The researcher noticed that if choirs reach a sufficiently high level, they act as learning organizations. The members of such choirs learn from each other on the individual and collective levels (Tamušauskaitė, 2012). What is more, this "hidden" education that students receive in such organizations can equip students with additional abilities and experience, thus making them more desirable candidates in the world of organizations and benefiting their communities. According to Astin and Sax (1998), such "hidden curriculum" increases overall satisfaction with education experience and provides means for students to enhance their organizational and general life skills (Astin & Sax, 1998). According to Miller and Seller (1990) cited by Alsubaie (2015), "this hidden curriculum refers to the unspoken or implicit values, behaviors, procedures, and norms that exist in the educational setting. While such expectations are not explicitly written, the hidden curriculum is the unstated promotion and enforcement of certain behavioral patterns, professional standards, and social beliefs while navigating a learning environment". Pollard (2008) claims that learners and teachers bring this hidden curriculum to educational institutions where the institution's virtues and culture shape it. The question arises as to the role of the hidden curriculum concerning

the learning objective whether it refers to additional ways learners employ to achieve the set objective or to reach an entirely different learning objective.

Niculescu and Norel (2013), for instance, refers to the hidden curriculum as informal curriculum and state that it is a genuinely informal curriculum which does not require learning objectives for the learning to take place (Niculescu & Norel, 2013). It is, therefore, possible for students to learn organizational learning skills as they perform tasks together with other members of the organization.

Portelli (1993) distinguished between two scenarios which may involve the hidden curriculum: (1) students are aware of the hidden curriculum, and the teacher is not, and (2) the teacher is aware of the hidden curriculum, but the students are not. There seems to be the third scenario as far as organizational learning is concerned: neither teachers nor students are aware of the hidden curriculum. Teachers fail to see these organizational learning possibilities since it has not been emphasized; organizational learning is not foreseen even in the formal curriculum. Not to mention that students pay no attention to what skills they acquire, they do not know even know how it is called. To them, this skill remains "tacit knowledge on the know-how" level. According to researchers in knowledge management (Eraut, 2000), experience which remains on the tacit knowledge level is quite quickly forgotten, unless it is constantly revised.

1.3.2. Factors of the development of university students' OL capability through non-formal and informal learning

Having discussed the possibilities to include the development of at least some organizational learning skills into the university's formal curriculum, it is now possible to look at the non-formal and informal possibilities to promote learning of these skills at the university. Students studying at the university are often involved in various student organizations. Their participation in such organizations is not required by the formal curriculum and is, as a rule, voluntary. However, such non-formal activities can promote organizational learning through the hidden curriculum. Furthermore, the benefits of student involvement in various activities at the university have already been discussed by Astin (1984), who claimed that such involvement might assume different forms, be it an absorption in academic work, participation in extracurricular activities, and interaction with faculty and other institutional personnel.

As Portelli (1993) stated, the hidden curriculum "teaches" in such a way that the students are usually unaware of having been taught anything. In other words, we do not speak about formal and organized learning, but rather about learning that occurs spontaneously because of the activities that were not originally designed for learning purposes.

The current section addresses the possibilities for student's organizational learning in student organizations within the university, such as student representations or art and sports clubs.

As a rule, students who are involved in the activities of student bodies (representations/unions) can be exposed to organizational learning. This is due to the fact that members of student bodies share the same organizational goals, a mission

and a vision; furthermore, student organizations, just like any other contemporary organizations, constantly face challenges which require them to solve ill-structured problems. For this purpose, new organizational knowledge is constantly needed. Therefore, organizational learning inevitably takes place in such organizations. Thus, students employed in such organizations usually develop organizational learning skills imperceptibly by solving organization's problems along with the other members. Of course, it requires time.

In the course of non-formal organizational learning, the development of the organizational knowledge takes place through the principle of "learning-by-doing". Organizational knowledge can be developed cyclically in successive stages of socialization, externalization, combination (the principle of the SECI model), but it can also be developed separately in the course of either socialization, externalization, combination, or internalization phases. What kind of the organizational learning process takes place depends on the nature of the practical activity being performed.

The discussion in this Subsubsection shows that universities have sufficient possibilities to implement the hidden curriculum of organizational learning. However, to what extent are universities aware of such possibilities?

Students' learning in student organizations. First of all, students who find themselves in a role of a member within an organization are often tasked with performing activities they have little or no experience at doing. Therefore, they learn as they work, i.e. they are involved in what Dewey (1986) referred to as "learning by doing". Dewey (1986) believed that an individual learns about the surrounding world through active participation in activities rather than passive intake of delivered information. According to Smart and Csapo (2007), the essence of learning by doing is in active participation in a planned event followed by analysis of experience and reflection. This experience is then transferred to educational or work settings (Smart, Csapo, 2007).

As noted by Jucevičienė (2015), experiences may have different educational value. The author claimed that experiences which are particularly valuable in terms of education are the ones which make the individual reflect on the relationship between the activities he/she does and the consequences of these activities (Jucevičienė, 2015). The author explored the possibility for Dewey's theory to serve as a conceptual basis for students' formal organizational learning. However, since in formal study programmes students prioritize their personal learning objectives (desired grade or mark) over organizational objectives (a requirement for OL to take place), Dewey's pattern is broken. Instead of learning by doing, students in educational environments will first learn, then do and then reflect on what was done. This way the pattern of learning, as indicated by Jucevičienė (2015), is as follows: learning-doing-learning.

The study conducted by Eraut (2004) revealed that workplace is a place where people learn a few things. Research conducted by the author revealed that employees not only acquired different knowledge but also improved a number of skills: (a) task performance, (b) awareness and understanding, (c) personal development, (d) teamwork, (e) role performance, (f) academic knowledge and skills, (g) decision making and problem solving, (h) judgement (Eraut, 2004).

At the same time the author noticed that there were certain activities involvement in which seemed to facilitate learning more than involvement in other

activities (Eraut, 2004). Eraut (2004) distinguished four activities that regularly resulted in learning: (1) participation in group activities, (2) working alongside others, (3) tackling challenging tasks, and (4) working with clients.

Marsick and Watkins (2015) suggested a different approach to learning in the workplace. The authors suggested discussing the issue in light of informal and incidental learning (Marsick and Watkins, 2015). Although, both informal and incidental learning refer to learning outside formally structured activities, they are not the same. Informal learning is not necessarily incidental, while incidental learning is always informal. Thus, Berg and Chyung (2008) suggested distinguishing between intentional informal learning activities and unintentional informal learning activities. Intentional informal learning is substantially more convenient to observe, describe, and research (Berg & Chyung, 2008) than unintentional informal learning, which is more often integrated into tasks. The authors present the following examples of intentional informal learning: self-directed learning, mentoring, networking, asking questions, and receiving feedback (Berg & Chyung, 2008).

Marsick and Watkins (2015) stressed that both informal intentional and incidental learning are much more likely to take place under non-routine conditions. These are the conditions when people are asked to deal with unstructured problems, i.e. the type of problems that do not have a clear, well-established solution and cannot be solved by applying standard procedures. This medium serves as a classic example for Nonaka and Takeuchi's (1994) model of knowledge creation, as while solving the presented unconventional problems, members of the organization often become aware of the tacit knowledge they and their colleagues possess.

Thus, incidental learning is never planned or intentional. Informal learning, on the other hand, can meet both enumerated criteria. Also, informal learning can occur in a number of situations outside the classroom that are not designed but are still planned (Marsick & Watkins, 2015).

Gu (2014) presents three forms of (mobile) informal learning, suggested earlier by Schugurensky (2000), and attempts to transfer them into a virtual learning platform. These three forms are as follows: self-directed learning, incidental learning, and socialization. Here, self-directed learning is understood as a plethora of learning activities that are assumed by learners without the assistance of a teacher (an instructor). However, according to Knowles (1975), one of the central features of self-directed learning is that the learning goals are set by the learner him/herself. It is up to the learner whether he/she does it absolutely self-dependently or with the help of an educator if the learner decided that the help was necessary.

Incidental learning is not intentionally initiated by the learner. As explained by Marsick and Watkins (2015), it is a by-product of some other activity, but the learner becomes aware that learning had occurred after the experience. Socialization, also known as "tacit learning", refers to a learning process that is unintentional (the learner has no intention to learn anything, nor does the learner realize that it has occurred). Socialization is also indicated by Nonaka (1994) as one of the modes of organizational knowledge creation in the SECI model.

Marsick and Watkins (2015) argue that learning takes place through a continuous dichotomy of the action and reflection where greater degrees of reflection require understanding that learning has occurred. To increase the impact of the reflection, the authors suggest applying the learned concepts in practice (Marsick & Watkins, 2015).

Despite being voluntary, student involvement in student organizations (e.g. student representation bodies) does resemble work in a business enterprise or a public institution. The "employed" students do assume different roles (positions), have responsibilities and a clearly set common goal which, perhaps for the first time in their lives, is not directly related to being assessed for a mark or grade. The benefits of getting involved in student organizations have also been noticed by Pascarella and Terenzini (2005) who claim that such involvement has positive impact on students' future careers.

It is worth mentioning that these student organizations are run ever more professionally. The question arises as to how can such a thing be possible? Students involved in e.g. student representations are usually the ones who have more free time. It means they are less likely to have a job. Where do they learn the skills to perform day-to-day activities within the organization, much less run in a professional manner? The answer seems to be clear—organizational learning. The newly recruited students are "trained" by their more experienced colleagues and at the same time they learn from them while working together on various projects. One might think that these student organizations have a sufficient organizational potential to implement Nonaka's (1994) model of organizational knowledge creation (the model was already analysed in the previous sections of the dissertation).

Having discussed the peculiarities of student organizational learning it is possible to distinguish features of the student OL:

a) The student learns in person in order to acquire new knowledge needed to pursue a new objective set by the students organization (individual learning);

b) Working together with other members of his/her work or activity group, the student generates new ideas in order to cope with new activity possibilities, new business challenges that arise for the group (collective learning (group level));

c) Representing his/her team and working together with other teams of the organization, the student generates new ideas, a shared understanding to cope with new opportunities for action, new operational challenges arising in the organization;

d) The student is able to assimilate newly established rules of the organization, which shortly become a skill of the student's changed activity;

e) The student, in collaboration with other members of the organization, share, apply, enhance their experience sometimes without even knowing it;

f) While being together with other members of the organization, students share experience with each other, sometimes without even realizing it, enriching their knowledge this way.

Students learning in art clubs. Students studying at the university have a number of possibilities to engage in organizational learning through participation in various clubs and organizations associated with the university, for example, art and

drama clubs, etc. As discovered by the investigation into the descriptions of study programmes of selected universities (Jucevičienė & Leščinskij, 2017), membership in such organizations is neither required by the formal curriculum, nor does it award additional credits to the students. However, it is possible that through participating in activities of such organizations, students develop organizational learning skills. It is likely that these skills are developed as a by-product of their activities rather than purposeful work with the particular learning outcome in mind. Art clubs, more specifically, orchestras, choirs, and drama companies have especially significant organizational learning by experience potential. When orchestras, choirs, and drama companies achieve a high-performance level, they are able to improvise while performing a piece or a play. Researchers have revealed that interpretation of a piece performed by an art group comes as a result of the organizational learning (Kline, Saunders 1993; Ceruti 2004; Tamušauskaitė, 2012). Actually, some researchers see organizational learning as knowledge sharing that takes place during regular communication. However, Ceruti (2004) claimed that organizational learning in an art group occurs due to the latent relations between artists and the emotional environment emitted by them and the performers as well as the performance of the piece itself. Therefore, despite having no reservations that students participating in high level art groups practice organizational learning, it remains unclear whether they would retain the same level of the skill if they started working in business organizations, which are not known for their artistic performance relations.

Participation in activities of sports (Xie, 2005; Pasebani et al., 2012; Usefi et al., 2013; Svensson & Mahoney, 2018) and business organizations may also involve students in practicing organizational learning. As a matter of fact, if collective solutions to improve activities are implemented on a regular basis while practicing sports, such teams would also display organizational learning. OL that occurs in sports teams, much like in art clubs or groups, is unintentional and incidental in its character. Therefore, it is likely to remain on the level of tacit knowledge. As indicated by Tumašauskaitė (2012), only by encouraging reflection on the process or additional explicit teaching may provoke members of such organizations realize the knowledge work they have been engaged in, and thus reveal the person's OL potential. It is highly probable that students can experience OL through participation in organized activities, e.g. at student's art club. Research into knowledge creation in a choir revealed that the involved processes are remarkably similar to OL (Tamušauskaitė, 2012). A peculiarity of this situation is in the fact that students do not understand that they are engaged in OL, i.e. whatever students learn, they do it implicitly. According to Berry and Dienes (1993), tacit learning is not characterized by a clear aim; it occurs spontaneously and the knowledge that is generated in the process is difficult to verbalize, i.e. it is also tacit. This phenomenon, however, is incredibly complex and requires additional research. Due to limitations in dissertation's volume it shall not be investigated.

The following factors of informal and non-formal OL can be distinguished:

F15: ***Student involvement. Students can get actively involved in the activities of the clubs or other organizations at the university or work organizations*** (based

on Smart & Csapo, 2007; Marsick & Watkins, 2015; Eraut, 2000). Can students get involved in the activities of the clubs or other organizations at the university? If so, do any of them communicate the possibility of developing organizational learning (non-formal learning)? Does university life offer other possibilities promoting organizational learning? In this dissertation, we look at the possibilities for students to get involved in (a) organizational (administrative) activities at various art/drama/music clubs, (b) organizational (administrative) activities in sports clubs, (c) organizational activities in student representation bodies at the university, (d) organizational (administrative) activities in other student organizations that carry out their activities the same way work organizations do. A note is required here; the author of the dissertation agrees that organizational learning can take place through or while performing artistic or perhaps even sports activities. When presenting his idea of the learning organization, Senge (1994) used an example of the jazz band. Empirical evidence also suggests that it is possible (Tamušauskaite, 2012). However, OL that occurs in artistic or sports activities is always tacit, i.e. those involved in such knowledge creation identify this process only if it is pointed out to them while reflecting on it (Tamušauskaitė, 2012).

F16: ***Students understand the organization's goal and actively pursue it by contributing to the organizational knowledge pool*** (cf. Dibella et al., 1996; Chiva et al., 2007; Ozan Onağ et al., 2014).

F17: ***Students realize that their activities within the organization are inseparable from organizational learning*** (based on Marsick & Watkins, 2015; Eraut, 2000; Argote, Denomme, & Fuchs, 2011). The fact that a student is involved in activities of some organization either through internships, voluntary involvement in art or sports clubs, or other activities does not guarantee his/her contact with OL. There are several ways an organization can involve students in OL activities:

a) Organization involves students in the knowledge creation processes in the organization and enables students to develop their OL capability (experiential learning) (Kolb & Kolb, 2005);

b) Students are involved e.g., through internship or activities in an organization, but the OL learning goal is not explicitly mentioned by the managers (incidental learning) (Marsick & Watkins, 2015);

c) A student is involved in organizational learning activities in his/her workplace. The student may be aware that he/she is being involved in OL activities (experiential) or unaware (incidental) (Marsick & Watkins, 2015);

d) A student is involved in student organizations where the new organization's knowledge is constructed. It is vital for students to practice OL in real organizational contexts. This way students gain organizational learning experience. Argote et al. (2011) noticed that experience is what occurs as organizations perform tasks.

F18: ***Environments ("ba") are created which enable knowledge creation through the SECI modes*** (based on Nonaka, 1994; Nonaka & Takeuchi, 1996; Nonaka & Konno, 1998; Nonaka et al., 2000). Students work in the organization's departments (units), and they feel they belong in these organizations, i.e., what Senge (2004) calls "goal alignment". The pooled knowledge assets are collected for

accomplishing the organization's task. In the socialization mode, students perceive themselves as members of a particular department; they act in it for some time, which allows for tacit knowledge to form within members of the department. When externalization takes place, the department has to be involved in decision making and that requires new organizational knowledge. In the combination mode, every once in a while, departments within the organization (student groups) come together to make collective decisions, decide on rules and attitudes. During internalization, these rules are introduced to the members of the organization and are employed in the activity in such a way that after some time they become the tacit knowledge for the members (students) of the organization.

F19: ***Students reflect on OL***. Students reflect on the decisions they made together as a group and later as an organization; this way they realize how knowledge is created, employed, and shared within organizations (Nonaka & Konno, 1998). Through reflection students make their personal learning environments for OL explicit.

F20: ***Students seek to further develop their OL capability as self-directed learners*** (Knowles, 1975). Students develop the OL capability outside the formal study program through MOOCS, trainings organized by an organization, voluntary inquiry into the subject, and other sources. Lifelong and life-wide learning principle is implemented from OL perspective. The principle is relevant because students as future knowledge workers need to exercise their OL capability and improve it continuously.

1.4. Bridging formal, non-formal, and informal learning for the development of university students' OL capability

It is not the purpose of this dissertation to determine whether it is more effective to develop students' OL capability through formal or informal learning. The calls of researchers and practitioners (Hall 2009; Kommalage, 2011) for blending formal curriculum with informal learning are becoming ever more prominent. It is also important to remember that now there are ways to do this. Outside the university curriculum various organizations exist that allow students to experience OL in practice. In Lithuania the examples of such organizations include Demola Vilnius (which also offers internships for students) or Lietuvos Junior Achievements for younger learners. These organizations usually employ an agile approach to their curriculum and various PBL designs, such as LEGO serious play, design thinking, etc. Universities should seek closer cooperation with such organizations, as this would enable students to get involved in solving real life problems in highly efficient simulated organizations. One of the ways of such communication could be the possibility to recognize and accredit learning that students undergo there. This could be achieved by communicating the APL (accreditation of prior earning), or rather one of its components, APEL (accreditation of prior experiential learning) possibilities to students, thus making involvement in such organizations more attractive.

The current prevailing view of education policy developers and researchers of learning as an activity that occurs everywhere and at any given time (i.e. lifelong learning) has led to certain means of formalizing what has been acquired through non-formal or informal learning. According to Adam (in Corradi et al. 2006), the

commitments presented in the communiques of the ministerial meetings (be it Prague, Berlin Bergen or other Communiques) indicated the transformational effect of the Bologna Process. One of the critical issues in these communiques (particularly Berlin Communique) revolved around recognition and accreditation of prior learning (Berlin Communique, 2003). However, to get a better understanding of how the concept evolved, it is essential to review some critical events in history and the terminology related to the process.

It is first necessary to look into some of the terminology that is employed when discussing the issues related to the accreditation and assessment of prior experiential learning. Burkšaitienė and Šliogerienė (2010) prepared a summary of various terms used in different countries both within and outside the EU. The terms are presented in Table 2.

Table 2. Terms and acronyms used in different countries (based on Burkšaitienė & Šliogerienė, 2010)

Acronym	Term in the original language and its translation	Country
APL	Accreditation of Prior Learning	The United Kingdom (UK)
APEL	Accreditation of Prior Experiential Learning	UK, USA, Sweden
RUPL	Recognition of Prior Uncertified Learning	Scotland (UK)
RIPL	Recognition of Informal Prior Learning	Scotland (UK)
RPEL	Recognition of Prior Experiential Learning	Scotland (UK)
PLA/APL	Prior Learning Assessment/Assessment of Prior Learning	USA
PLAR	Prior Learning Assessment and Recognition	Canada
RPL	Recognition of Prior Learning	Australia, Republic of South Africa
VAE	Validation des Acquis de l'Expérience	France
VPL	Valuation of Prior Learning	The Netherlands
EVC	Erkenning Verworven Competenties	The Netherlands

The terms presented in Table 2 emerged over the course of some 40+ years. Ever since the UNESCO's *Learning to Be: The World of Tomorrow* report (Faure, 1972) was published back in 1972, education policymakers carefully started approaching education as a universal and lifelong process. As indicated in the previous sections, higher education has undergone numerous transformations due to its dependence on the social and economic context not only on the national level but also internationally. From the year 2000 (the initiation of the Lisbon Process), the EU's goals of creating a dynamic knowledge-based economy and ensuring social cohesion were backed by a proliferation of national lifelong learning policies in the EU member states. The importance of learning outside the formal learning institutions and training has now been highlighted. Unfortunately, there were few instruments to make this education "visible". Thus, it was Bjørnåvold's (2000) contention that

recognition of prior learning (whether experiential or formal/non-formal) was supposed to make learning visible. Such recognition would motivate learners to keep learning in various settings. As pointed out by Kaprawi et al. (2015), "APEL is about giving value to the learnings, skills and competencies people have gained, whether acquired through formal or informal learning" (p. 2).

Colardyn and Bjornavold (2004) also suggest that visibility of learning can be achieved through linking assessment and validation processes of prior learning to formal educational systems. Thus, learners can have their prior formal, non-formal, or experiential learning assessed against national standards without having to complete an education or training programme (Colardyn & Bjornavold, 2004). This validation (assessment and recognition) can have other positive effects for HE institutions, students, and other stakeholders. Valk (2009) suggests this approach could help counter some of the issues generated by reforms in higher education and incompatibilities between different curricula. This also seems to be an excellent possibility for universities to attract new non-traditional students (Valk, 2009). The emergence of this new category of non-traditional students, according to Merrill and Hill (2003), questions, redefines, and reconstructs "the purpose of universities, previously seen as elite research institutions socialising and reproducing a young, middle class minority as the next generation of intellectuals" (p. 56). According to Merrill and Hill (2003), the traditional "Academic knowledge is perceived in some quarters as no longer adequate for a knowledge society requiring new demands and wider types of knowledge" (p. 56).

However, validation does not come easy. Actually, until recently there has been a visible lack of regulation for validating prior learning (Bohlinger et al., 2016). In 2012, Council of the European Union defined validation as "a process of confirmation by an authorized body that an individual has acquired learning outcomes measured against a relevant standard and consists of the following four distinct phases:

1) Identification, through dialogue of particular experiences of an individual;

2) Documentation, to make the individual's experiences visible;

3) A formal Assessment of these experiences, and

4) Certification of the results of the assessment which may lead to a partial or full qualification (CEDEFOP, 2014:12)".

Although the phases presented above generalize the requirements for the process of accreditation of prior experiential learning, it is still important to look at the principles that lie at the foundation of the process. Burkšaitienė and Šliogerienė (2010) suggested that it is possible to distinguish at least six principles which can serve as a basis for developing the APEL (Accreditation of Prior Experiential Learning) process. These principles are as follows:

1. Universities can assess and recognize any learning that occurred in **non-academic** context;

2. Only university-level **learning and outcomes achieved through such learning** are recognized, not the learning experience itself;

3. **Evidence** to prove the outcomes achieved in non-academic contexts are necessary;

4. **Assessment criteria** for non-formal and informal learning have to be clearly defined;

5. The university reserves the right to set **limitations** for assessment and recognition of non-formal and informal learning;

6. Assessment and recognition of non-formal and informal learning at the university is open to the university's internal and external analysis and evaluation (Burkšaitienė and Šliogerienė, 2010).

Various EU member states have working APEL systems, however, no sources indicate that these systems accredit OL skills/capability/competence developed in a non-formal or informal way. Despite these doubts, a working APEL system, meant for accrediting (formalizing) additional outcomes gained through informal or non-formal activities into the formal curriculum, can serve as a bridging factor unifying the developing students' capability through formal, informal, and non-formal learning, which can be formulated as: **F21**. ***Students' learning for the development of OL capability is accredited.***

Such systems as APEL can also help students bridge formal, non-formal, and informal learning. Students who have developed personal learning environment to include the development of the OL capability will transform educational and any other potential learning environments in a way that allows them to further develop their OL capability.

Summary of the factors influencing the development of students' OL through formal, non-formal, and informal learning. It is one of the key purposes of this dissertation to complete the gap that is the development of students' OL capability in the HE. The author of the dissertation fosters a holistic approach to the problem which requires integration of formal, non-formal, and informal learning. Graphically, the development of students' OL capability through the integration of formal, non-formal and, informal learning can be rendered as shown in Figure 5.

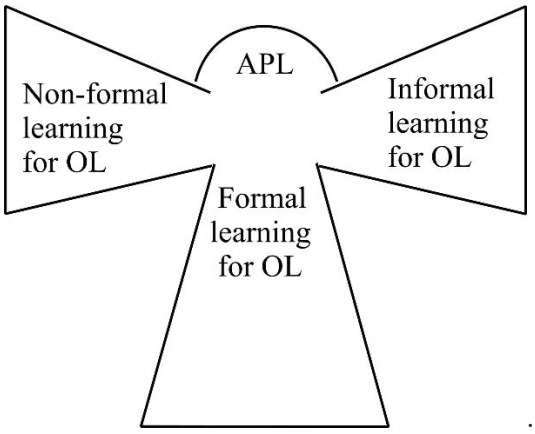

Figure 5. Integration of formal, non-formal, and informal learning for the development of students' OL capability

The model presented in Figure 5 illustrates the possibilities students have to develop OL while studying at the university. According to Figure 5, students have various possibilities to develop OL while studying at the university which, based on the type of learning involved, can be classified as developed through formal, non-formal, or informal (see previous sections for more details on formal, non-formal, and informal learning) learning. As far as formal learning is concerned, two possibilities are investigated in this dissertation: (1) students develop their OL capability through courses that either teach OL explicitly or employ pedagogical designs (models) that allow students to develop their OL capability, e.g. EDENSOL; (2) intended learning outcomes (ILO) set for internships include OL. If OL is included as one of the ILOs in the formal curriculum, it needs to be assessed. For this purpose, formative assessment is employed. Formal learning for the development of the OL capability gives students the "tools" to recognize the significance of the OL for contemporary organizations and enables students to identify the OL process in organizations. If students are involved in activities of an organization (student organization or work organization), this organization may take steps to introduce students to OL (e.g. through internal training or by encouraging the student to take training outside of the organization). This way, students may be involved in non-formal learning. Finally, students may experience and develop OL/knowledge creation capability through activities in a student organization or work organization and learn it without intending to do so (informal learning). This learning tends to stay tacit, especially if students did not have any prior knowledge or experience of the OL. However, if students can reflect on their OL activities and recognize them, it enables learners to validate and subsequently even to get the results of such learning accredited. Non-formal and informal learning for the OL capability development can be integrated in formal learning if the university designs its curriculum based on the agile approach, i.e. the curriculum welcomes added value which can be created by students themselves as well as other organizations (other than university) which students maintain relationships with and often get involved in their activities. However, the agile curriculum alone is not enough. Such a curriculum needs to be related to the Accreditation of Prior Learning (APL) system existing at the university. Especially relevant in this respect is the APEL (Accreditation of Prior Experiential Learning) subsystem which enables validation of students' "learning by doing" results.

The first part of the dissertation has dealt with the analysis of theoretical insights into the organizational knowledge creation stages (Nonaka, 1994; Nonaka & Takeuchi, 1996) and "ba" spaces (Nonaka & Konno, 1998; Nonaka, et al., 2000) as well as the investigation of the theory of Educational and Potential Learning Environments (Jucevičienė 2007, 2010, 2013) and the EDENSOL model (Jucevičienė & Valinevičienė, 2015). The analysis of these and other influential works has allowed the author to theoretically substantiate the factors of the development of students' OL capability. These factors have been separated into two categories: formal factors that are likely to have major impact on the development of students' OL capability and informal factors, the extent of impact of which on the development of students' OL capability is difficult to predict. Informal factors will also include the non-formal

learning possibilities as these possibilities are investigated in the context of this dissertation as existing outside the university curriculum. The summary of the factors of the development of students' OL capability is presented in Table 3.

Table 3. List of the factors influencing the development of students' OL capability

Formal		**Informal and non-formal**
F1: Educational environments that employ special didactic systems (which simulate organizations) are created	F8: Student internships are designed to facilitate the development of students' OL capability	F15: Student involvement; students can get actively involved in the activities of the clubs or other organizations at the university or work organizations
F2: Aims and the learning outcomes of the study program or its module provide for the development of OL capability	F9: Aims and the learning outcomes of the internship module provide for the development of the OL capability	F16: Students understand the organization's goal and pursue it by contributing to the organizational knowledge pool
F3: Students understand the simulated organization's goal and pursue it by contributing to the organizational knowledge pool, because they know it is important for practicing OL	F10: Students are involved in the internships in organizations that recognize the importance of organizational learning and in collaboration with the university create environments that involve students in knowledge creation processes	F17: Relationship between activities in the organization and organizational learning: *a)* an organization involves students in the knowledge creation processes; *b)* students are involved e.g., through internship or activities in an organization, although the OL capability development goal is not mentioned in the description of the internship; *c)* a student is involved in organizational learning activities in his/her workplace; *d)* a student is involved in student organizations where the new organization's knowledge is constructed
F4: Students have at least some initial knowledge of knowledge-based organizations	F11: Students are deliberately involved in the collective problem-solving process at the internship organization to experience OL on the level of the	F18: The created environments ("ba") enable knowledge creation through the SECI modes

	organization as a whole	
F5: Educational environments created within the selected didactic model include environments ("ba") which simulate the knowledge creation modes described in the SECI model	F12: Students understand the internship organization's goal and pursue it by contributing to the organizational knowledge pool, because they know it is important for practicing OL	F19: Students reflect on OL
F6: Students' learning for the development of the OL capability is assessed	F13: Students' learning for the development of the OL capability during the internships is assessed	F20: Students seek to further develop their OL capability as self-directed learners
F7: Reflection is encouraged	F14: Reflection on students' activities in the internship is encouraged	
F21: Accrediting students OL capability		

The substantiated factors suggest a holistic view on the possibilities to develop OL capability at the university. The integration possibilities for these factors are created through the agile curriculum in combination with an APL system.

2. SUBSTANTIATION OF EMPIRICAL RESEARCH METHODOLOGY

The objective of the empirical research is formulated as follows: "How factors influencing the development of university students' organizational learning capability are manifested in formal, non-formal and informal learning?"

2.1. Research strategy

A case study was chosen as the main research strategy for the dissertation. This strategy relies on a detailed investigation of the environment, an individual object, specific documents, or events (Creswell, 1998). One of the most significant advantages of the case study strategy is that it allows the researcher to reveal details and elements of the social phenomenon as well as their synthesis into a unified social process, observe its natural flow, and distinguish the changes within the process (Lokke & Sorensen, 2014). The case study was selected because of its suitability for educational contexts, as pointed out by Yin (2005). The author questions the usefulness of statistics as it deprives the research of the descriptive richness of the context and the people under investigation (Yin, 2005). The current research is aimed at investigating the student's OL in not only formal settings (study program), but also in the non-formal and informal settings. This "blurs" the boundaries of the investigated phenomenon and makes it difficult to distinguish it from the context and calls for a holistic approach to the investigated phenomenon. Case studies are well known and documented as being suitable for a systematic approach to the investigated phenomenon (Merriam, 2009; Merriam & Tisdell, 2016; Yin, 2003). According to Yin (2014), case studies are among researcher's primary options when "the boundaries between the phenomenon and context may not be evident" (p. 16). Therefore, a researcher is expected to investigate the factors that directly impact the phenomenon as well as their relationship with the context of the phenomenon.

According to researchers (see e.g., Gibbs, 2012; Yin, 2014), a case study is a suitable strategy for explaining "how" or "why" a social phenomenon works. In this instance, the researcher aims to develop and generalize theoretical prepositions through analytical generalizations (Gibbs, 2012). The research questions investigated with the help of case studies usually tackle a complex social (in the case of this dissertation, educational) phenomenon. The current study aims at investigating a complex educational phenomenon of student's OL in formal, non-formal, and informal settings. Such a configuration makes it difficult to design an experiment or employ a strategy that gives the researcher some degree of control over the phenomenon. The case study is described as a strategy that can be employed for investigating activities that the researcher has no control over (Merriam, 1998; Yin, 2003). The case study is a suitable approach due to the wish to perceive the students' engagement in activities promoting student's OL in these different settings.

As a rule, case studies are not limited to either qualitative or quantitative evidence solely and may involve mixed evidence, consider: "any contrast between quantitative and qualitative evidence does not set apart the various research methods" (Yin, 2014, p. 19). Therefore, case studies enable the application of the mixed approach to the research paradigms. The current research on student's OL is

conducted by combining Positivism, also known as the "scientific method", and interpretivism. The former aims at studying the social world the way that physical phenomena are studied. According to Guba (1990) cited in Al Riyami (2015), Positivism is entrenched in a realist ontology, the main contention of which is that "there exists a reality out there, driven by immutable natural laws" (Al Riyami, 2015). Yin (2014) claimed that a realist perspective assumes the existence of a single reality that is independent of any observer (p. 17). Positivist epistemology is referred to by Guba (1990) as "objective", i.e., it urges the researcher to seek the answer to their research questions in nature itself, while at the same time maintaining a detached and objective view of the problem. The nature of the dissertation and the research question requires a mixed approach. Thus, both positivist and interpretivism paradigms are adopted.

According to Al Riyami (2015), the positivist approach aims to eliminate such factors as values or other "biasing" elements to prevent their influence on the outcomes of the research. The nature of the positivist approach dictates the peculiarities of the data collection techniques, which usually rely on gathering data in the form of numbers. Such an approach to data collection allows the data to be presented quantitively (Riyami, 2015). Thus, it can be said that the positivist approach allows modelling social (educational) phenomenon utilizing the existing research; factors that promote practicing OL and at the same time develop student's OL skills in formal and non-formal educational processes and the informal student activities.

The theoretical modelling of the factors could be more convincing if it was based on a more substantial amount of previous scientific research, which would include not only theoretical but also the experimental research results of student's OL. Unfortunately, not much research has been conducted in the field so far.

It is also expedient to pay attention to OL and the research on knowledge management and learning organizations (Kline & Saunders, 1993; Tamušauskaitė, 2012), which noticed that OL could occur in certain circumstances of human activities and their cognition without any particular managerial of educational effort. Therefore, it is possible to assume that there are possibilities for students to practice OL that have not been yet discussed by researchers. Therefore, it is expedient to utilize the interpretivist approach to research, in order to determine as many factors impacting student's OL as possible.

According to Al Riyami (2015), the interpretive approach can also be referred to as the "constructivist paradigm", since it is rooted in the fact that realities are multiple and socially constructed. Interpretivists adopt a relativist ontology, where a single phenomenon can have multiple interpretations and there is no necessary process by which truth can be determined. As noted by Creswell (2007), the aim is to get a deeper understanding of the phenomenon and its complexity in its unique context, rather than to generalize it to the whole population. According to Grix (2004), interpretivists believe that knowledge is gained through a strategy that "respects the differences between people and the objects of natural science and therefore requires the social scientist to grasp the subjective meaning of social action" (p. 64). The idea of interpretivism is not to begin with a theory but instead generate one through the

research process (Creswell, 2007). One fundamental difference between the positivist and the interpretivist approaches lies within their approach to research participants, where interpretivists regard them as people (with emotions and other biasing elements) rather than research objects (positivist approach) (Al Riyami, 2015).

In the interpretivist approach, a phenomenon is studied through different perspectives and from different points of view. According to Al Riyami (2015), interpretive researchers select a methodology that allows studying a phenomenon in question in its natural environment. Therefore, a case study is an appropriate strategy for the interpretivist research. According to Punch (1998), popular data collection methods in the interpretivist approach are interviews and observation through collecting field notes or video-recording. The author (Punch, 1998) also suggests that interpretive researchers tend to collect documents and participants' diaries.

The combination of the abovementioned approaches is also accepted by Yin (2009), who agrees that the case study can be applied to justify a theoretical model and further develop (improve) it by applying the results of the empirical research. This is further confirmed by Løkke and Sørensen (2014).

2.2. Research design

Yin (2003) describes the research design as the logic that links the types of data to be collected and data collection methods to the initial questions of the study. It also foreshadows the conclusions to be drawn. This "logic", according to Creswell (1994), serves as the paradigm that helps researchers and readers to comprehend the social phenomena.

2.2.1. Logical structure of the research

The empirical research consists of two stages:

1. Pilot study;
2. Main research.

The pilot study has been conducted prior to conducting the main study. The pilot study was necessary because the object of this dissertation is broad, which usually leads to a large-scale empirical research construct and numerous research actions. However, the analysis of literature has already suggested that the two groups of factors in question (of formal and informal learning) may be unevenly distributed in the university practice. If the pilot study on the study programs most likely to be focused on developing students' OL capability confirms the findings from literature analysis, it would confirm the varied degree of attention to the two groups of factors discovered in the analysis of scholarly literature. Such findings would allow focusing the main research more rationally, emphasising the observed trends. Thus, the pilot study is international as it was assumed that the differentiated levels of attention to the specified groups of factors could be revealed by analysing the curriculum of the selected programs presented on their official websites. Specific study programs (business and management) that are most likely to stress the realities of modern organizations delivered in the top European business and

management universities were selected for the pilot study. Thus, it was likely they could aim to develop students' OL capability.

The main research

To empirically investigate how factors influencing the development of university students' organizational learning capability are manifested in formal, non-formal, and informal learning in practice, study programs where OL seemed most relevant were selected. It was important to examine these cases in the same context, thus, only one university was chosen. It was appropriate to choose one of the top universities in a particular EU country, which despite being a late-comer country has made a significant economic breakthrough in the recent years. Therefore, it is likely that the situation of such university study programs will reflect the most wide-spread trends observed in the pilot study.

2.2.2. Pilot study

The aim of the pilot study was to investigate what possibilities to develop students' OL capability are communicated by internationally recognised universities, which deliver study programs in the field likely to involve OL.

Sampling and methods

Possibilities for student organisational learning in the university curriculum have been investigated with the emphasis on *formal curriculum*, i.e., what the objectives, curriculum (topics) and forms of studies, methods, other day-to-day activities taking place at the university state.

In this case, two *research methods* were applied:

a) to identify possibilities for organisational learning arising from the university activities, the *document analysis* was applied. The analysed documents include study programmes presented on the websites of the selected universities. To make this research feasible (there are thousands of universities offering a number of study programmes), a highly selective approach to sampling had to be adopted. Therefore, the author decided to limit research to:

- the analysis of business and management programmes as these had the highest probability of fostering efforts to develop the organisational learning capability since these programs train future managers;
- the analysis of undergraduate (Bachelor's degree) study programmes as these, as a rule, educate high school leavers who have little to no work experience and are unlikely to have encountered OL in the past, whereas students who prefer Master's degree study programmes usually have some work experience. This means the developers of these programs may believe students have acquired the necessary capability at work and it is not necessary to include the development of OL into the study program;
- universities offering business and management study programmes recognised by ranking bodies as the best in Europe (selected based on the QS World University rankings indicating ten best universities teaching business and management subjects);

the European universities have been selected because all European universities follow the Bologna requirements that emphasise learning outcomes. Thus, the comparability of study programmes at different universities increases. The selection was initially limited to ten universities as it was presumed that such scope of the research would be sufficient to identify the prevailing trends. If the scope had proven to narrow, the number of the investigated universities would have been increased up to the point where the trends are clearly seen.

Summarising the sampling

Top ten universities according to QS ranking that offered undergraduate courses in business and management were selected for the analysis. Only Bachelor's degree programmes have been investigated as it is likely that postgraduate and graduate students may have developed the OL capability in their jobs or participation in other organizations.

Data collection

Data have been selected analysing study programmes based on the following key characteristic of the curriculum:

- Are the objectives or learning outcomes that can hint at developing organisational learning capability indicated (organisational learning, group learning, construction of collective knowledge, etc.)?

- Are the topics/courses that may include organisational learning content included (human resources, organisational behaviour, knowledge management, organisational learning, etc.)?

- Are internships included in study programmes? What information is provided? The very fact that internships are included in the study programme would allow considering particular hypothetical conditions for organisational learning.

The hidden curriculum has also been investigated by applying the document analysis method (the analysis of the same university websites and study programmes presented on these websites as in the case of the formal curriculum was conducted). The analysis was aimed at investigating the following issues: Can students get involved in the activities of the clubs or other organisations at the university? What are the names of the clubs and organisations? If so, do any of them communicate the possibility of developing the organisational learning capability? Does university life offer other possibilities to develop students' OL capability?

This allowed investigating two research questions in the pilot study (PRQ1 and PRQ2):

PRQ1. What possibilities do students have to develop the OL capability in educational environments?

PRQ2. What possibilities do students have to develop the OL capability in potential learning environments? Since literature analysis allowed distinguishing the factors influencing the development of students' OL capability through formal, non-formal and informal learning, the content analysis has been conducted using the deductive approach, as preliminary theoretical proposition prior to data collection have been formulated (Rowley, 2002). More specifically, the directed content analysis

(Hsieh & Shannon, 2005) was employed. Data was coded on the basis of the factors that were defined before the data collection. An example of the data coding employed in the investigation is presented in the Table 4 below, as suggested by Hsieh and Shannon (2005) codes were derived from the relevant research findings.

Table 4. Data coding in the pilot study

Research question	Code/theme	Code description
PRQ1	Students learn about OL explicitly	Students have a course where OL is mentioned as one of the aims or learning outcomes
	Students practice OL during internships	Students have an internship in the study plan where OL is mentioned as one of the aims or learning outcomes
	Didactic models for developing students' OL capability are employed in courses	The teaching/learning methods specified in program descriptions include didactic models that can be used to develop students' OL capability
PRQ2	Students are involved in various student bodies	The university has various student bodies that function as real-world organizations
	Students are involved in sports and art clubs at the university	The university has various sports and art clubs that can involve students into artistic or sports activities as well as administrative activities

2.2.3. The main study

In the current dissertation, the case study is not only a research strategy but also a tool developed to answer the proposed research question. The question word "how", according to Yin (2014), prompts the use of the case study as the primary research strategy.

The multiple-case study methodology was chosen as a research design in order to better illustrate the phenomenon in question. Such a full picture can prove difficult to acquire using generalization or statistics (Yin, 2009). Feagin et al. (1991) claim that case studies perfectly match the studies where the focus is to obtain a holistic, in-depth investigation of a given social phenomenon in its natural context.

According to Yin (2014), case studies are often criticized for not being rigorous enough or lacking objectivity. Such studies are said to generate "soft" data (Denscombe, 2010). However, Yin (2014) addresses the "rigor" issues by claiming that such occurring problems can be avoided by following the recommended research design pattern. A proper research design contains the following elements:

a) Case study's questions;

b) Propositions (if any);

c) Units of analysis;

d) The logic linking the data to the propositions;

e) The criteria for interpreting the findings (Yin, 2014, p. 29).

The main research question in this dissertation is, "**What** factors promote the university students' organizational learning?" To answer this part of the question, the analysis of research literature has been conducted and allowed formulating a set of factors that may come into play and impact the development of student's OL.

However, in order to see how these factors are experienced by the students of a particular study program, additional questions have to be investigated. As was discussed in the previous chapter of the dissertation, the author aims to investigate OL in a holistic, systematic way. Therefore, it is possible that students may experience OL or learn for OL in a non-formal or informal way.

The case study's questions and propositions are formulated in the following way:

RQ1 How do students experience factors formal learning for OL in the selected study programs?

P1. Factors influencing the development of students' OL capability manifested in the university's educational environments (formal learning) do not entirely match the factors that come into play in knowledge-based organizations.

P2. The university curriculum (formal education) only partially focuses on the development of the OL capability; the emphasis is made on the group level rather than the organization level (several groups working together).

P3. Faculty members teaching courses that foresee OL as an intended learning outcome create educational environments for the development of students' OL capability on the formal learning level, but not all the students transform them into their personal learning environments.

P4. Possibilities of formal learning for developing students' OL capability are not used when formulating intended LO for internships.

RQ2 How do students experience factors of non-formal and informal learning for OL in the selected study programs?

P5. Some students have the possibility to develop their OL capability during internship in an organization that involves them into its activities (although it is not specified in the course description).

P6. Students participating in activities of student organizations have the possibilities for developing OL capability informally:

P6-1. Factors of experiential learning for OL are at play in such organizations, similarly, to work organizations;

P6-2. These factors impact the shaping of students personal OL learning environments.

P7. Students, employed in work organizations and participating in the organizational activities, have the possibilities for developing OL informally:

P7-1. Factors of experiential learning for OL are at play in such organizations;

P7-2. These factors impact the shaping of students personal OL learning environments.

RQ 3 How do students shape their personal learning environments to learn for OL?

P8. Students that shape their personal learning environments for the development of the OL capability influenced by the factors of formal learning develop their OL capability by employing the possibilities of non-formal and informal learning.

P9. Students who are not affected by the factors of formal learning influencing the development of OL capability do not use the non-formal and informal possibilities to develop their OL capability.

Sampling of the cases

According to Yin (2009), a case is "a contemporary phenomenon within its real-life context, especially, when the boundaries between a phenomenon and context are not clear and the researcher has little control over the phenomenon and context" (p. 13). The current dissertation investigates two cases:

1. Different possibilities for students' organizational learning (factors that impact these possibilities) that emerge while studying in two selected Management study programs at X University Faculty of Management;

2. Different possibilities for students' organizational learning (factors that impact these possibilities) that emerge while studying in two selected IT study programs at X University Faculty of Fundamental Sciences.

It is appropriate for the units of analysis in case studies to possess explicit bounds (Merriam & Tisdell, 2016). The current case study is restricted to investigating possibilities for students to develop their OL capability through formal, non-formal, and informal learning experienced by students in the educational environments designed by the teacher (formal OL) or within student or work organizations. Temporal constraints have limited the unit of the analysis to the period of ongoing studies as an undergraduate at the university.

The contexts of the investigated units of analysis: (a) X University as a university; this context is the same for both cases; (b) faculty; this context is different, as two faculties are investigated: Faculty of Management and Faculty of Fundamental Sciences. In its homepage, X University is introduced as "a leading higher education institution situated in Vilnius the capital of Lithuania. X University is one of the biggest research universities in Lithuania with a focus on technologies and engineering and a strong emphasis on university-business cooperation". This information is essential as it stresses the cooperation between X University and the industry, which hints, among other things, at the significance and the possibilities for student internships (which is vital for the formal learning aspect discussed in the dissertation). Each case consists of two study programs. The study programs do not have to be investigated as separate cases for the following reasons: (a) study programs

in the case are in the same cycle of studies and have the same number of credits and award a degree in the same area; (b) study programs in the case have a number of overlapping courses; (c) study programs in the case offer identical possibilities for student internships; (d) students studying in the selected study programs have identical possibilities for involvement in student organizations.

Unit of the analysis and units of data collection

Since the focus of the dissertation is the factors of students' formal, non-formal, and informal organizational learning (the factors have been described in the previous section of the dissertation), the unit of the analysis is defined as the possibilities (factors) for formal, non-formal, and informal organizational learning in the abovementioned study programs at X University. Yin (2014) warns against a common misconception where a unit of data collection that occurs in cases when they belong to different levels is confused with a unit of the analysis. The unit of the analysis may be collective (e.g., an organization or a community to which the individual belongs), and a unit of data collection may be individual (where data is collected from a single person during an interview) or vice versa (Yin, 2014). Multiple sources for data collection have been employed in the current dissertation from both individual (semi-structured interviews, descriptions of study programs) and collective (survey) data collection units.

The logic linking the data to the propositions and data collection methods

General analytic strategy

The propositions formulated by the author of the dissertation above call for different methods of data collection and analysis. The results of the analysis are also discussed with regard to all the data collection and analysis methods. To be able to analyse the results in such a comprehensive manner, Yin (2014) suggests to choose an appropriate analytic strategy. According to Yin (2014), four general strategies can be employed in the case study: relying on theoretical propositions, working data from the "ground up", developing a case description, and examining plausible rival explanations. The cases developed in the current dissertation rely on theoretical propositions that have been developed on the basis of the factors of learning for OL, which in turn have been based on the theoretical assumptions about learning, OL, and learning environments that lie in the roots of the EDENSOL model.

Analytic techniques

According to Yin (2014), five specific analytic techniques are applicable within any general strategy:

a) pattern matching,
b) explanation building,
c) time-series analysis,
d) logic models,

e) and cross-case synthesis.

In this dissertation, the researcher employed the technique of *pattern matching* to compare empirically based patterns with the ones formulated in the literature review in order to find out whether the distinguished factors of learning for OL have been manifested in a predicted fashion.

Further, the *cross-case analysis* was employed to find out whether the cases had replicated the results or produced contradicting findings. Yin (2014) suggested using word tables for this purpose. The tables are useful in revealing the themes answering RQs from each case and grouping the answers.

The research questions and propositions are targeted at the factors (see Table 3). Prior to the empirical research, only hypothetical assumptions can be made as to how the substantiated factors can practically influence students' OL capability development through formal, non-formal, and informal learning. Therefore, research questions and their propositions have been related to the factors on the basis of the manifestation of the factors revealed in the theoretical part of the dissertation: P1 to F1 and F2; P2 to F1 and F2; P3 to F3, F4, F5, F6, F7; P5 to F15, F17, F16, F18; P6 to F15, F17, F16, F18; P7 to F15, F17, F16, F18; P8 to F19, F20, F21. P4 rejects manifestation of factors: F8, F9, F10, F11, F12, F13. P9 rejects the manifestation of factors: F19, F20, and F21.

Logic of data collection

The logic of data collection and the links of data collection methods and research methods are presented in Table 5.

Table 5. Linking data collection methods and propositions of the case study questions

No.	**Proposition**	**Research method**	**Data sources**	**Research question**
1.	Factors influencing the development of students' OL capability manifested in the university's educational environments (formal learning) do not entirely match the factors that come into play in knowledge-based organizations	Analysis of scholarly literature Content analysis Survey	Works of Nonaka and other researchers Websites of the selected study programs; study programs indicated by the students in the survey Students in the selected study programs	RQ1

		Semi-structured interview Semi-structured interview	Students who have indicated the most factors of formal learning for OL in the survey Teachers of particulars course units that foresee development of OL	
2.	The university curriculum (formal education) only partially focuses on development of the OL capability; the emphasis is made on the group level rather that organization level (several groups working together)	Content analysis Written survey Semi-structured interviews Semi-structured interviews	Study programs Students in the selected study programs Teachers of particulars course units that foresee the development of OL Students who have indicated the most factors of formal learning for OL in the survey	RQ1
3.	Faculty members teaching courses that foresee OL as an intended learning outcome create educational environments for the development of students' OL capability on the formal learning level, but not all the students transform them into their personal learning environments	Written survey	Students in the selected study programs	RQ1
4.	Possibilities of formal learning for developing students' OL capability are not used when	Content analysis Survey	Selected SPs	RQ1

	formulating intended LO for internships	Semi-structured interviews	Students in the selected SPs Students who have indicated the most factors of formal learning for OL experienced during the industry internship in the survey	
5.	Some students have the possibility to develop their OL capability during the internship in an organization that involves them into its activities (although it is not specified in the course description)	Survey Semi-structured interviews	Students in the selected SPs Students who have indicated the most factors of formal learning for OL experienced during the industry internship in the survey	RQ1
6.	Students participating in activities of student organizations have the possibilities for developing the OL capability informally: P6-1. Factors of experiential learning for OL are at play in such organizations, similarly, to work organizations; P6-2. These factors impact the shaping of students personal OL learning environments	Survey Semi-structured interviews Analysis of scholarly literature	Students in the selected SPs Students who have indicated the most factors of formal learning for OL experienced during the industry internship in the survey Works of Nonaka and other authors	RQ2
7.	Students, employed in work organizations and participating in the organizational activities, have the possibilities for developing OL informally:	Survey Semi-structured interviews	Students in the selected SPs Students who have indicated the most factors of learning for	RQ2

	P7-1. Factors of experiential learning for OL are at play in such organizations. P7-2. These factors impact the shaping of students personal OL learning environments	Analysis of scholarly literature	OL experienced during their work in an organization in the survey Works of Nonaka and other authors	
8.	Students that shape their personal learning environments for the development of the OL capability influenced by the factors of formal learning, develop their OL capability by employing the possibilities of non-formal and informal learning	Survey Semi-structured interviews	Students in the selected SPs Students who have indicated the most factors of formal, non-formal, and informal learning for OL experienced while studying at the university in the survey	RQ3
9.	Students who are not affected by the factors of formal learning influencing the development of the OL capability do not use the non-formal and informal possibilities to develop their OL capability	Survey	Students in the selected SPs	RQ3

Research methods

Analysis of scholarly literature

The analysis of scholarly literature was important for this study as it enabled justification of factors that impacted learning for OL. The method also was used for the methodological part because it contributed to overall validity of the case and made it possible to draft propositions and research questions. The method allowed to maintain the chain of evidence and discuss the results in the empirical part of the dissertation.

Document analysis

Merriam and Tisdell (2016) describe a document as a written, visual, digital, and psychical material relevant to the study. The authors classify documents into naturally occurring and research generated (Merriam & Tisdell, 2016). The former may contain a great deal of irrelevant data; thus, research generated documents may

be considered more valuable for the researcher (Merriam & Tisdell, 2016). The current dissertation however, made use of the naturally occurring documents, such as annotations of the programs on the websites and descriptions of course units.

Content analysis

One of the data analysis methods employed in the dissertation is the content analysis. According to Elo and Kyngäs (2008), it is mostly used for describing a phenomenon on a conceptual level. Hsieh and Shannon (2005) refer to it as a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns. Hsieh and Shannon (2005) differentiate between conventional, directed, and summative content analysis. The directed approach has been selected for this study as prior research has been conducted to theoretically substantiate factors and propositions. The directed content analysis offers a more systematic approach at the expense of the richer description of the data.

Semi-structured interviews

According to Yin (2014), the nature of the interview employed in case studies is much more open-ended. The author suggests interviews should resemble a conversation that is directed by some guiding questions, but one which makes it impossible to know all the questions in advance (Yin, 2014). Furthermore, Creswell (2009) suggests including more open-ended questions when relying on qualitative data and adopting the social-constructivist paradigm.

The semi-structured interviews were mostly employed to get deeper insights from both teachers and students with regards to the answers of an online, thus capturing the students' perspective of learning for OL. The guiding questions for the interviews were designed to collect data from students regarding (a) their experience developing the OL capability in formal, non-formal, and informal settings, (b) the data gathered from the written survey (see the initial questions in Appendix A). Those students whose responses in surveys seemed to match the most factors were invited for the interviews. The teachers were asked to comment on the courses they delivered where students had identified the possibilities to learn for OL. In addition, the interviews have allowed students to reflect on their experience when learning for OL; often this would be an eye-opening moment for the interviewees. Interviews were conducted in Lithuanian and only the quoted parts from the transcripts have been translated. The approximate duration of the interviews was 45–60 minutes. Seven students were interviewed in Case 1 and six in Case 2. Students were selected after the results of the surveying was completed. Students' interviews took place in April 2019. After receiving the results of the survey, teachers delivering the courses wherein students recognized elements of the OL have been selected for the interviews (see Table 6 below). Upon completing content analysis of the documents, a facilitator from Demola Vilnius, an organization that offered students non-traditional internships, was interviewed.

Table 6. Students selected for the interviews

CASE	Student code	Involvement in student organizations	Has been employed for more than six months	Participated in non-traditional internships
CASE 1	*A*	+	+	
	B	+	+	
	C	+	+	
	D		+	+
	E		+	
	F			+
	G			+
CASE 2	*H*		+	
	I			+
	J	+	+	
	K	+		+
	L		+	
	M		+	

Survey

The main research instrument in the dissertation was a survey. The survey delivered quantitative data. The survey was developed based on the factors discussed in the previous chapters (see Table 4). Each factor is addressed in the survey by 2–4 questions, depending on the extent to which the questions reveal the factor (see Table 7 for examples of questions).

Table 7. Examples of questions illustrating the investigated factors

Factor	Questions
Aim related to the development of students' OL capability is formulated	Q1. Has organizational learning been introduced as an aim or a learning outcome in any course? Q2. Has collective/group learning been introduced as an aim or a learning outcome for any course?
Students develop a shared tacit knowledge within the group/department	Q10. Can you claim that in your group you have developed shared understanding of ideas that may not necessarily has been explicitly stated but were known to all the members of the group? Q11. While solving issues related to the assignment that required an organization to be formed, did you try to make collective decisions or generate collective ideas?

The questionnaire for the study consists of 78 questions. The questions were presented to students in the following way: questions related to developing OL capability in formal learning (Q1–Q35), questions related to the development of OL capability in non-formal and informal learning (Q36–Q69), demographic questions (Q70.1–70.6). The preamble to the questionnaire had a glossary explaining the definitions used in the tool.

The answers were registered on a Likert scale with four options: two positive and two negative ones. The fence sitting option in the Likert scale was removed (*I don't know*) as the investigated factors are known to exist and students have either come in contact with them or not. The received ordinal variables allowed establishing correlations using Spearman's rank correlation coefficient as well as performing Mann-Whitney U test to investigate whether differences between students' answers in both cases were statistically significant (Muijs, 2010; Rupšienė & Rutkienė, 2016).

The respondents were asked to complete the questionnaire using Google Forms platform, which ensured a smooth answering experience and allowed maintaining the data for the case study database. Students were surveyed over a period of one month in March 2019. The questionnaire is provided in Appendix 1.

Sample size

The survey was designed for the third- and fourth-year students studying in two study programs in the field of information technology and two study programs in the field of management. The total population of the third- and fourth-year undergraduate IT students is 395, using the Modification for the Cochran Formula for Sample Size Calculation In Smaller Populations (Cochran, 2007), with the confidence level given at 95, the required sample size is estimated at 196 respondents. The total population of third- and fourth-year undergraduate management students is 133, using the same formula as in the case with undergraduate IT students, with the confidence level given at 95, the required sample size is estimated at 99 respondents. Table 8 shows the sample size of the participants, in both cases the sample is sufficient for the given confidence interval.

Table 8. The total sample of the participants taking the survey

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	5	1.6	1.6	1.6
	IT	197	62.7	64.4	66.0
	Management	104	33.1	34.0	100.0
	Total	306	97.5	100.0	
Missing	System	8	2.5		
Total		314	100.0		

Validity and reliability

Construct validity refers to whether a scale measures or correlates with the theorized construct it measures. The following steps were taken to ensure the construct validity: (a) framework for factors of formal, non-formal, and informal learning for OL was substantiated in accordance with the recognized theoretical sources; (b) the questionnaire is based on the framework; (c) the questionnaire was presented to experts (3 teachers and 3 students who were members of the student representation), in accordance with their remarks, certain changes have been introduced.

Internal validity is the extent to which a piece of evidence supports a claim about cause and effect within the context of a particular study. To ensure internal

validity, initial theoretical propositions based on the comprehensive literature review were used to produce empirically based findings. Triangulation and multiple sources of evidence were used (documents, surveys, semi-structured interviews); a chain of evidence has been maintained. In this dissertation, evidence from different sources is presented together while investigating each proposition, this way triangulation is ensured.

External validity is the validity of applying the conclusions of a scientific study outside the context of that study. In other words, it is the extent to which the results of a study can be generalized to and across other situations, people, stimuli, and times. Although, only one university was investigated in Lithuania, the research results were discussed considering the findings from the pilot study, which gave the research an international dimension. What is more, the following requirements for choosing the university for the main study were observed: (a) an innovative university that stresses the importance of developing innovations and educating competent workforce for contemporary organizations was selected; (b) study programs were selected accordingly, as it was believed that these for developing students' OL capability may emerge in the context of the programs. The results of the cases revealed similar trends in developing students' OL capability.

Reliability is the overall consistency of a measure. A measure is said to have a high reliability if it produces similar results under consistent conditions. Requirements for validity were rigorously observed. The methodological design created in the dissertation was used to investigate two cases in the same university. Similar data was acquired in both cases. After completing the case study, its database has been developed; if needed, data can be retrieved at any point.

The criteria for interpreting the findings

According to Yin (2014), many case studies address the criteria for interpreting the findings when statistical analyses are relevant. Conventionally, quantitative studies consider a ***p*** level of less than .05 to demonstrate that observed differences are "statistically significant", i.e. the statistical estimates serve as the criteria for interpreting the findings (Yin, 2014). However, the analysis of findings should not rely on the use of statistics different ways of ensuring appropriate criteria for interpreting the findings are necessary. The propositions investigated in the current dissertation are based on theoretically justified factors. In the main data source, which is the survey, each of the propositions is investigated by asking a question that reveals how this factor is manifested. Table 9 shows the links between the factors, propositions, and questions in the survey.

Table 9. Links between questions in the survey and factors influencing the development of the OL capability

Propositions	Factors	Questions in the survey
P1	F1 F2	2, 3, 4, 5 1, 2, 3
P2	F1 F2	2, 3, 4, 5 1, 2, 3
P3	F3 F4 F5 F6 F7	6, 7, 8, 10 3, 4 9, 10, 11, 12, 13, 14, 15, 16 19, 65, 66, 67 19, 65, 66, 67
P4	F8 F9 F10 F11 F12 F13 F14	20, 21 1, 2, 21 20, 25, 27, 28, 29, 30, 31, 32, 33, 34 25, 26 22, 23, 24 21, 35 21, 35
P5	F15 F16 F17 F18	36, 37 38, 39, 40, 51, 52, 53 20, 40, 41, 50 42, 43, 44, 45, 46, 47, 48, 49; 54, 55, 56, 57, 58, 59, 60, 61, 62
P6-1	F15 F16	36, 37 38, 39, 40; 51, 52, 53
P6-2	F17 F18	20, 40, 41, 50 42, 43, 44, 45, 46, 47, 48, 49; 54, 55, 56, 57, 58, 59, 60, 61, 62;
P7-1	F15 F16	36, 37 38, 39, 40, 51, 52, 53
P7-2	F17 F18	20, 40, 41, 50 42, 43, 44, 45, 46, 47, 48, 49, 54, 55, 56, 57, 58, 59, 60, 61, 62
P8	F19 F20 F21	65, 66, 67 63, 65 64, 68, 69
P9	F19 F20 F21	65, 66, 67 63, 65 64, 68, 69

The pattern matching technique has been employed to compare empirically received patterns with the factors drawn in the process of the literature review and to investigate whether the factors delivered the predicted outcomes or whether they have

to be revised. The cross-case analysis technique has been utilized to find out whether the cases yielded consistent, replicable results. Then the results were compared to the results of the research carried out in the earlier stages of writing the dissertation. Manifestation of factors influencing students' OL capability in formal learning has been cross-checked against the investigation of the top management and business schools in Europe (according to QS ranking 2016) carried out by Jucevičienė and Leščinskij (2017). While Manifestation of factors influencing students' OL capability in non-formal and informal learning has been cross-checked against the investigation of students employed in work organizations carried out by Jucevičienė and Leščinskij (2018).

Interpreting the semi-structured interview data: coding

Hsieh and Shannon (2005) highlight two possibilities when it comes to coding: (a) coding starts with the highlighting of the transcript for the parts relevant to the investigated phenomenon, subsequently coding them with predetermined codes; or (b) predetermined codes are applied immediately. In this dissertation, the author starts applying predetermined codes immediately. According to the steps suggested by Hsieh and Shannon (2005), the author of the dissertation created a coding system based on the research questions and propositions (see Table 10 below).

Table 10. Code patterns for data from the semi-structured interviews

Research question	**Code/theme**	**Code description**
RQ1	Students learn about OL explicitly	Students remember taking a course that deals with OL or knowledge management
	Students practice OL during internships	The organizations where students have internships have OL listed as an aim or intended learning outcome
	Didactic models for developing students' OL capability are employed in courses	Students recognize educators using methods that emphasize work in simulated organizations, teams, project-based tasks, etc.
	Environments for OL are ensured	Students collaborate, know the goals of the organization, and actively pursue these goals; students learn from each other, assess each other's ideas
	Students' efforts to develop the OL capability are assessed	Students recall OL being included in either the summative assessment or as one of the formative assessment measures

RQ2	Students develop the OL capability in organizations through experiential learning	The university did not list OL as a learning outcome, but through experiential learning students develop their OL capability
	Students are involved in organizations on campus	The university has various student bodies, sports, and art clubs that can involve students into artistic or sports activities as well as administrative activities
	Students practice OL in student organizations	Student develop the OL capability by participating in the organizations decision-making, knowledge generation and dissemination processes; they understand and pursue organizational goals
	Students practice OL in work organizations	Students feel full-fledged members of the organization, know and pursue its goals, participate in decision making and help implement these decisions in their organizations
RQ3	Students recall learning about OL or practicing in formal learning	Students are able to recognize the concepts they have studied in courses or experienced during the internship and apply them to develop the OL capability
	Students ignoring OL	Students do not seek to develop the OL capability and find it irrelevant

2.3. Research ethics

While conducting the research and presenting its results, the researcher has followed all General ethical principles. King in Sullivan and Forrester (2018) reminds of the so-called Helsinki principles, which are as follows:

- protection from harm (physical or psychological);
- respect for individual dignity;
- right to self-determination;
- right to privacy;
- protection of confidentiality (Sullivan & Forrester, 2018).

While conducting the research, no potentially hazardous experiments were commenced. Therefore, the physical well-being of neither the respondents nor the informants was threatened. The questions discussed in the dissertation do not dwell on the emotional aspects and are not invasive, thus, do not pose any threat to the psychological well-being. Each respondent and informant were treated with appropriate dignity. The participation in both surveys and the interviews was voluntary; the questions were designed in a way that did not impose the answers on

students, hence, the self-determination principle was satisfied. The fact that students' names were not disclosed at any stages of the research ensures privacy and confidentiality.

Burgess (2005) identified four ethical dilemmas: (a) research sponsorship; (b) research relations; (c) informed consent; (d) data dissemination. In the current dissertation these dilemmas were addressed. While conducting the research, the investigator received a scholarship as a PhD student at Kaunas University of Technology. However, neither the university administration nor the senior research staff have intervened in the research activities. The researcher was familiar with some of the students who participated in the survey; none of the interviewed students were previously known to the researcher. The author of the dissertation informed the surveyed students of the purpose and the methods of the research. The researcher communicated the benefits of the research, which gave respondents a sense of involvement (Cohen et al., 2002). The survey did not require respondents to provide names. Instead, students had to create unique codes. In order to select the informants for the interviews, an email has been sent to all the student groups that took part in the research inviting students whose codes were have been included in the email to answer the call for interviewees. The email has also included the researcher's mobile number and students were invited to contact the investigator on both email and mobile. Such discretion resulted in difficulties when inviting students to interview but assured confidentiality. The informants selected for the interviews were informed of the purpose and methods of the research. The interviewees were made aware that only the parts of their interviews would be used in the dissertation. All the interviewees reviewed the interview data and verified the correctness of the information.

As faculty members at the investigated university were also interviewed, respect for their privacy and confidentiality was maintained by anonymizing all data collected and ensuring that it remained anonymous while writing the dissertation and after it has been published. The logical scheme of the empirical research is presented in Figure 6 below.

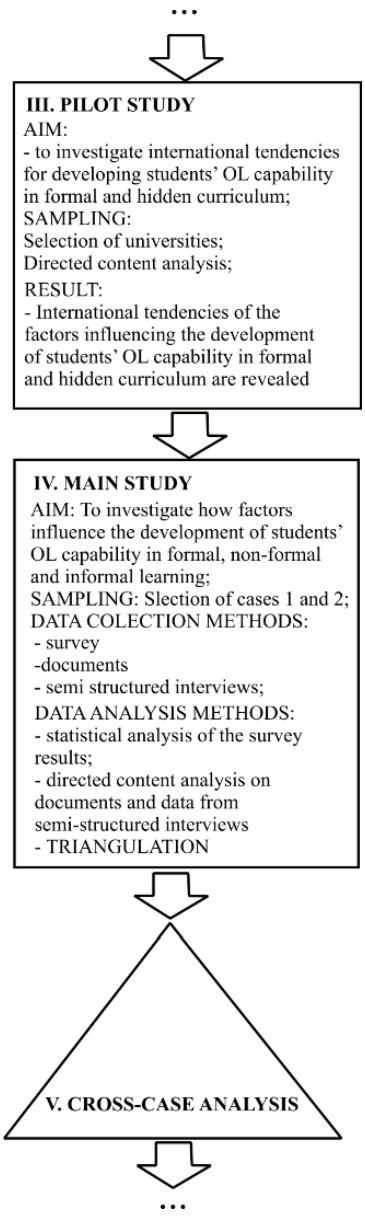

Figure 6. Logical scheme of the empirical research

The substantiated empirical research methodology allows investigating the factors influencing the development of students' OL capability in formal, non-formal, and informal learning.

3. INVESTIGATION OF FACTORS INFLUENCING THE DEVELOPMENT OF STUDENTS' OL CAPABILITY

The current chapter discusses the findings of the empirical investigation of factors influencing the development of students' OL capability. The findings from both the pilot study and main research are presented.

3.1. Pilot study: investigation of factors influencing the development of students' OL capability at internationally recognized European universities

Findings from the pilot study are presented in this section. These findings have been published (Jucevičienė & Leščinskij, 2017) and presented in an international conference. The investigation of the documents available on the websites of the top 10 European universities (based on QS rankings) revealed the following possibilities for students to develop the OL capability.

Possibilities to develop the OL capability in the formal curriculum

Learning outcomes

First, it is necessary to mention that no university directly references the OL capability among the listed intended learning outcomes (ILOs). Three universities, namely, U9, U8, and U3 have included learning outcomes that may hint at OL. These universities expect their students to acquire "collective learning", "managing knowledge", and "knowledge management" abilities. Other universities list learning outcomes that are usually important for organizational learning: U1 and U6 expect students to develop teamwork, U7 expects to manage people, U10 expects to understand individual and collective behaviour in organizations. Meanwhile, U2 is more learning-process rather than learning outcomes oriented (learn about knowledge and learning). No learning outcomes or objectives of study programmes were found on the websites of universities U4 and U5, which is rather strange considering the standardisation effort in European higher education.

Study process: courses and internships

As was discussed in the previous chapters, internships in real organizations as well as a sandwich course and PBL curriculum designed while using the Agile approach, can have significant impact on developing students' OL capability. However, traditional theoretical courses should not be ignored as well. Two (U3 and U9) universities have Knowledge Management courses and internships in companies. Particularly, university U9 stresses that students have a possibility for an internship for the entire year. These universities may be expected to have practically created certain conditions for developing organizational learning.

Curriculum at U5 foresees an integration of the course and internship. Module Consulting Project in an External Organization has also the status of the internship. University U2 also deserves additional attention even though it does not foresee an internship, but the curriculum stresses an integrative project. Four universities (U1, U3, U6, U10) foresee optional internships, however, U6 also includes business simulation into the curriculum. Therefore, it

is possible to expect that students at university U6 would have at least partially created conditions for practicing organizational learning independently of whether they choose between having an internship or not. U9 offers a long-term placement; the university utilizes the so-called sandwich courses (Wilson, 2012). No internship is intended in the curriculum of universities U4 and U8, and the study programmes delivered at these universities do not have courses related to knowledge management.

Study process: teaching/learning methods and models

As previously mentioned, one of the selected universities (U2) have foreseen an Integrative Project module in its formal curriculum. Unfortunately, the formal curriculum presented on the university website does not provide further details on the module. Therefore, one can only expect that university U2 applies PBL as a model the way it is applied at Aalborg University that developed PBL. Such a PBL model also provides vast possibilities for organizational learning. No specific information on the teaching/learning methods is provided in the description of the universities. Thus, information on the curriculum provided on the websites of these universities does not convince that conditions for developing students' OL capability are ensured. Only a fraction of undergraduate Business and Management study programmes delivered at top ten European universities present convincing information regarding the possibilities for students to develop the OL capability while doing undergraduate courses. Such not a very optimistic statement can be partially conditioned by some research limitations; the successful application of the selected research methodology (the analysis of the study programme curriculum presented on the university webpage as a document) depends on how exhaustive information on the curriculum is provided on the website. The conducted research revealed that information on the curriculum was not presented in an exhaustive manner.

Summarizing possibilities to develop students' organizational learning capability through formal curriculum, it is necessary to notice that special attention has to be devoted to the presentation of organizational learning in terms of learning objectives and learning outcomes within the curriculum itself and by communicating it to students. Unfortunately, analysis of the top 10 European undergraduate Business and Management degree programmes presented on the university websites revealed that neither had such learning objectives nor learning outcomes directly formulated. The descriptions of the study programmes hinted at some latent possibilities to develop students' OL capability. However, if such possibilities are to be practically realized, educational models fostering and developing these skills have to be implemented in the formal curriculum. These models combine learning objectives and learning outcomes as well as the study process, wherein students act as an organization to solve socially significant real-life problems (cf. EDENSOL model).

Possibilities of the hidden curriculum for student organizational learning

The pilot study has also examined the possibilities for students to develop the OL capability through a hidden curriculum. The contention is that students participating in real student organizations are likely to experience OL in practice without being deliberately taught.

As can be seen in Table 11, students in all ten universities have the possibilities to get involved in activities of student organizations, art and sports clubs. Such involvement may result in exposure to OL within the organization. However, the websites of the study programmes did not provide much insight into the nature of this organizations.

Table 11. Possibilities for organizational learning reflected in 10 best Business and Management undergraduate degree study programmes delivered at European Universities

Formal Curriculum				Hidden Curriculum
Indicators / University code (study programme)	**Learning outcomes**	**Course units, courses, themes**	**Internships in the industry**	**Clubs, other organizations**
U1 (Management)	Ability to manage work in multicultural teams	Cross-cultural teams and project management	Optional	Student union, student associations, student nations, student art clubs (about 25) and sports teams; religious societies, political societies
U2 (Management)	Learn about knowledge and learning	Elective modules: Management, Organisations and Society; Integrative project	Not included in the study plan	Student union, different orchestras, several chorus, several bands; more than 300 students run societies and sports clubs
U3 (Management, International business economics)	Teamwork (ability work with group dynamics) Knowledge Management	Knowledge management; Human Resources Management	Optional; students choose either to study abroad or undergo an internship	Student union; more than 300 societies
U4 (International Management)		Work, organization and society	NO	Student union, alumni club; more than 70 sports clubs
U5 (Management)		Organizational behaviour; Consulting project in	Yes; Consulting project in external organization	Different clubs; more than 50 sports clubs, student unions, alumni club

		external organizations		
U6 (Management of Business and Technology)	Competences of Teamwork and collaboration	Human resources Department collaboration (a complex project involving group work)	Yes, 4 credits – semi-annual, module description holds no hints at OL	Radio club, photo club
U7 (Business Administration)	People management skills	Elective courses: business simulations	Optional cannot exceed 30 ECTS. No module description	Students are provided support to start their own clubs; numerous sports clubs, alumni club
U8 (International Economics and Management)	Abilities of Managing knowledge	Organization Theory	Not included into curriculum	Theatre group, choir, dance companies, student representation, student association
U9 (Management)	Ability to foster Collective learning	Work based learning; Human resources management; Management simulation	Yes. Duration – entire year. During this placement students work on their projects within companies	Student union, leisure club, sports clubs
U10 (International Business Administration)	Understanding of individual and collective behaviour in organizations	Organizational behaviour; Human resources management	Optional	Sports, academic business, trading, debating, alumni clubs, student representation, theatre company, choir, etc.

Summary of the pilot study

Universities face the challenge of educating students for knowledge work, which means developing their OL capability. Unfortunately, even in the top ten business management study programmes in European universities the formal curriculum does not communicate (e.g. through learning aims and outcomes and their assessment) the possibility to develop the OL capability. Nevertheless, one of the universities aimed at "collective learning" and two universities have formulated objectives related to knowledge management. The formal curriculum of three investigated universities has outlined student internships in external organizations; one of the universities pointed out a full-year internship, four universities offered students internships as an option and three universities had no internships in the study plan. Internship in a real-world organization alone may not guarantee the development of students' OL capability because of the, usually, too short duration of the internship which, consequently, limits the involvement of students in the organization's activities. Students at all ten investigated universities have the possibilities of developing the organizational learning capability through the involvement in the activities of student associations and clubs.

3.2. Factors influencing the development of students' OL capability at the X University in Lithuania

The factors of student's learning for OL have been derived from the analysis of the scholarly literature. In the spirit of lifelong and lifewide learning, the factors are concerned not only with learning for OL as experienced by students in the study program they are involved in, but also in other settings on or off campus (non-formal or informal learning). Thus, three research questions and propositions drafted for these questions were used to direct the empiric part of the dissertation:

RQ1 How do students experience factors formal learning for OL in the selected study programs?

P1. Factors influencing the development of students' OL capability manifested in the university's educational environments (formal learning) do not entirely match the factors that come into play in knowledge-based organizations.

P2. The university curriculum (formal education) only partially focuses on the development of the OL capability; the emphasis is made on the group level rather that organization level (several groups working together).

P3. Faculty members teaching courses that foresee OL as an intended learning outcome create educational environments for the development of students' OL capability on the formal learning level, but not all the students transform them into their personal learning environments.

P4. Possibilities of formal learning for developing students' OL capability are not used when formulating intended LO for internships.

RQ2 How do students experience factors of non-formal and informal learning for OL in the selected study programs?

P5. Some students have the possibility to develop their OL capability during internship in an organization that involves them into its activities (although it is not specified in the course description).

P6. Students participating in activities of student organizations, have the possibilities for developing OL capability informally:

P6-1. Factors of experiential learning for OL are at play in such organizations, similarly, to work organizations;

P6-2. These factors impact the shaping of students personal OL learning environments.

P7. Students, employed in work organizations and participating in the organizational activities, have the possibilities for developing OL informally:

P7-1. Factors of experiential learning for OL are at play in such organizations;

P7-2. These factors impact the shaping of students personal OL learning environments.

RQ 3 How do students shape their personal learning environments to learn for OL?

P8. Students that shape their personal learning environments for the development of the OL capability influenced by the factors of formal learning, develop their OL capability by employing the possibilities of non-formal and informal learning.

P9. Students who are not affected by the factors of formal learning influencing the development of OL capability, do not use the non-formal and informal possibilities to develop their OL capability.

The empirical part of this dissertation is aimed at assessing the extent to which students experience learning for OL during the courses that they do at the particular university, internships, while being involved in student organizations, or during their work in real business organizations.

The current chapter presents the results of the empirical investigation carried out by the author. First, the context of the cases is presented. Next, findings from each case are discussed. Finally, the results from both cases are cross-checked to highlight the similarities and differences in them and to prove or reject the propositions presented above.

Description of the context of the investigated cases and research sample

The cases investigated in the dissertation are described as follows:

1) different possibilities for students' organizational learning (factors that impact these possibilities) that emerge while studying in two selected Management study programs at X University Faculty of Management;

2) different possibilities for students' organizational learning (factors that impact these possibilities) that emerge while studying in two selected IT study programs at X University Faculty of Fundamental Sciences.

One of the peculiarities of the case studies is that they require an extremely precise and comprehensive description of the context in which they are investigated (Yin, 2014). Both cases in this dissertation share a similar context. First of all, both cases are situated at the same university, for ethical reasons the name of the university shall not be disclosed, and it shall hereinafter be referred to as X University. The university website presents it as one of the biggest research universities in Lithuania with over 9600 students (11% international) and 960 academic staff members (72% with a PhD degree). The university delivers 112 study programs in three cycles (undergraduate, graduate, and post-graduate). The selected study programmes are implemented by expert practitioners and competent researchers in the given field. The majority of the faculty teaching in the program holds a PhD.

The X University ranks 581–590 in the International University Rankings QS World University Rankings 2019 and is among 2.1% of the world's best universities 2019. The X University ranks 39th in the QS University Rankings: Emerging Europe and Central Asia ranking and is a leader among Lithuanian technical universities. The university is also ranked on the basis of the field of studies. In the Computer Science and Information Systems field of studies the X University ranks among top 451–500 universities. Whereas in the field of Business and Management Studies, it ranks among top 101–150 universities.

The initial research design presumed investigating four cases, where each study programme was considered a separate case. However, upon closer investigation of the study programmes, the researcher observed a number of similarities between them. Not only did they award degrees in the same fields, but they also had overlapping courses, particularly the courses that were considered potentially interesting to this study. The internships were also organized in a similar way and often in the same companies.

One of the main data collection methods for the study was a written survey of students studying in the selected study programmes. The sample for the survey consisted of the third and fourth year students only. The reason for such a selective approach is rather pragmatic. Since learning for OL is investigated in light of formal, non-formal, and informal learning, students in their third- and fourth-year of studies have had a higher possibility to experience OL not only while doing the courses, but also in the internships (third year) and in work organization.

Rationale for selecting the study programs. The study programs were not selected randomly. First, the author has decided to select the study programs in the field of business and management as those have a higher chance of having the learning for the OL component. OL is mainly investigated by management researchers as well as those interested in investigating the organizational environment (Easterby-Smith & Lyles, 2011). Second, the most popular study programs were selected. Some study programs had very few students (e.g. 11 or 13), which would render little use for the survey results. However, since OL is particularly important for knowledge-based organizations, the author also looked into the study programs that educated specialists for organizations operating in what Jucevičienė (2013) referred to as emerging knowledge economy reservations in Lithuania (the IT sector). Thus, students doing

their degrees in two of the most popular study programs from the field of Information and Computer Science were selected for investigation.

3.2.1. Case 1

Case 1 presents the analysis of the manifestation of factors influencing development of students' OL capability in formal, non-formal, and informal learning in the selected IT field of studies programs.

3.2.1.1. Factors of formal learning in educational environments

This section investigates possibilities for students to experience learning for OL in the formal learning setting, i.e. in the study programs. The research question that is investigated in this chapter is formulated as follows: RQ1 How do students experience factors of formal learning for OL in the selected study programs?

First, the websites of the study programs were analysed to investigate whether the selected programs include OL among their intended learning outcomes (ILOs). IT1 and IT2 are among the most popular study programmes at the investigated university. The university website provides a comprehensive look into these study programmes, i.e. it gives insight into what are the career prospects for future graduates, competition scores and aims of the programme as well as a list of ILOs, as is required by the Bologna Process documents (1999). Websites of IT1 and IT2 study programmes do not specifically mention knowledge management or OL as such. However, both study programs investigated in the case include two specific learning outcomes that are formulated in a way that might hint at OL; these are introduced using codes: CG1 and CG2. CG1 reads: "[students] will be able to work in a team, clearly communicate their arguments and ideas, put forward and discuss ideas". CG2 ILO reads: "Will be able to assume group responsibility and share group vision, work with co-workers with different backgrounds, present ideas and results and maintain business communication". In order to investigate which course units are linked to these ILOs, the document analysis was conducted on the study program descriptions. The study program descriptions were obtained from the vice-dean of the faculty. The analysis of the program descriptions revealed that the following courses were related to the investigated learning outcomes: CG1. Final thesis 2 (IT1 and IT2), Demola internship 2 (IT1 and IT2), Internship in the industry 2 (IT1 and IT2), Object oriented programming (IT1), Operating systems (IT1 and IT2), Introductory Internship (IT1 and IT2), Introduction to Project Management (IT1 and IT2), Computer graphics (IT2). CG2: Management (IT1 and IT2), Introduction to software engineering (IT1 and IT2), Media production (IT2), Introduction to Game development (IT2), Economics (IT1 and IT2). Table 12 presents availability of the courses in both study programs investigated in Case 1.

Table 12. Availability of courses that include CG1 and CG2 ILOs in both study programs in Case 1

Study / Programme / Course	IT1	IT2
Final thesis 2	Yes	Yes
Demola internship 2	Yes	Yes
Internship in the industry 2	Yes	Yes
Object oriented programming	Yes	No
Operating systems	Yes	Yes
Introductory internship	Yes	Yes
Introduction to Project Management	Yes	Yes
Computer graphics	NO	Yes
Management	Yes	Yes
Introduction to software engineering	Yes	Yes
Media production	NO	Yes
Introduction to Game development	NO	Yes
Economics	Yes	Yes

In the survey students were asked if any of the teachers in the program mentioned OL as one of the ILOs in the course. Students' answers are presented in Table 13. As the analysis of the study program revealed, OL is not included into the list of learning outcomes on either program, therefore, the majority of students (71.9%) have claimed that OL was likely not introduced as an ILO. Only 14.3% have been positive that OL was not among the ILO introduced in the course. However, six per cent of respondents mentioned that OL may have been implied. Interestingly, only 7.4% were sure OL was mentioned as an ILO.

Table 13. Number of students who indicated that OL has been introduced as an ILO (Case 1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	31	14.3	14.3	14.3
	Probably not	156	71.9	71.9	86.2
	It was implied but not directly stated	13	6.0	6.0	92.2
	Yes, it was clearly stated	17	7.8	7.8	100.0
	Total	217	100.0	100.0	

If students answered "yes", they were asked to name the course. Some of the students,

however, did not recall in which course the OL intended learning outcome was mentioned, hence their answers were coded as missing. Answers where students were positive that OL has been introduced as an ILO are presented in Table 14 below.

Table 14. Courses students identified as having OL elements (Case 1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AI	1	.5	5.3	5.3
	Audio Technologies	2	.9	10.5	15.8
	Databases	1	.5	5.3	21.1
	Game Development	1	.5	5.3	26.3
	Image Analysis	1	.5	5.3	31.6
	Internet Technologies	1	.5	5.3	36.8
	Management	1	.5	5.3	42.1
	OOP	1	.5	5.3	47.4
	OOP, Mathematical Modelling	1	.5	5.3	52.6
	Philosophy	1	.5	5.3	57.9
	Project Management	1	.5	5.3	63.2
	ISE	3	1.4	15.8	78.9
	ISE, Project Management	1	.5	5.3	84.2
	Software Engineering	1	.5	5.3	89.5
	Statistics	1	.5	5.3	94.7
	Visualization Technologies	1	.5	5.3	100.0
	Total	19	8.8	100.0	
Missing	N	198	91.2		
Total		217	100.0		

In most cases students have identified a single course where OL has been introduced as an Intended learning outcome (ILO). Project Management, Audio Technologies, and Object-Oriented Programming were recognized as having OL intended learning outcome by two students. However, four students named Introduction to Software Engineering (ISE) as a course that included OL ILO. This has presented the researcher with an interesting conundrum, where students remembered OL being introduced as an ILO, although such learning outcome is not specified in the program description.

To investigate this issue, the document analysis of the course description has been conducted. The contention of the researcher is that OL may have been introduced by the teacher as an ILO because some specific didactic system (method) was employed. The analysis of the course description revealed that one of the methods employed in delivering the course was groupwork. However, it was neither specified in what way has the method been employed nor what is considered “a group”. The researcher has managed to contact one of the teachers who delivered the course. The teacher no longer works at the university, but he has agreed to participate in the

interview. Having explained why the teacher was invited to the interview, several questions have been asked to guide the further conversation. It was soon revealed that the task students had in mind was in fact introduced as a team project, several groups of students (about 4–6 students in each group) were given several problems. Most of the groups had different problems (e.g. investigate architecture of a particular software, find flaws in software architecture, etc.). The teacher never referred to the groups as an organization, also, no organizational goal was given. In fact, the teacher referred to groups as "project teams" or "project groups"; consider the following excerpts from the interview:

Organizations sound very ambitious, some groups rather…
They, the project groups, were given a problem each…
The teams, the project teams, had to present their solutions…
Some of the teams were larger…

When first asked whether he knows why students have indicated that the course introduced OL as an ILO, the teacher said he has never discussed OL with students. However, later during the interview he mentioned that on several occasions he invited students to learn from each other, for example:

I told [students], you can't solve this problem on your own, help each other, learn from each other…
If You know something the others don't help them, learn from each other…

The interviewee has also pointed out that he may have mentioned the ability to work together and learn as a group when he introduced the group assignment. The reason for this was that the process as well as individual contributions of each of the students were assessed as well as the final result. The assessment relied on the comments of students on the performance of their peers, consider:

I asked them, each time after they have presented, about, well, their contribution…
Nobody said anything was wrong with their groupwork…
Some people have never shown up, you know, so the others told me they did not contribute…

During the interview, the concept of organizational learning, as understood and explained in this dissertation, was discussed with the interviewee, who agreed that it is a useful ability that may contribute to student's employability. Moreover, he agreed that it is difficult to simulate an organization, but it might be interesting to try doing so:

Some are very good at coding, bad at working together, [teamwork] is required…
I agree it is interesting, useful…
Maybe in management programs. We have too few hours…
I think it is difficult to work on a group level, but we need it [groupwork], simulating an organization would be difficult…

The teacher was asked whether he thinks students managed to build a shared vision and had their goals aligned, or whether they pursued their personal learning goals.

I do not know; I think they cared (about the result)…

For some students, it was not even groupwork… they did not participate, but they wanted to get the same mark as the others…

Some groups did, I know they had meetings where they discussed the solution…

Some groups just split the work…

It is university, they want good grades, it is more important for many than a good solution, but I tried to explain that a good solution means a good grade…

The analysis of the data from the interview with the teacher revealed that in university courses, students tend to pursue their personal learning goals rather than the goal set for the organization, even when the two goals seem to be aligned. This implies that the courses students have at the university need a special didactic system that would allow simulating an organization and elevate students above their personal learning goals.

It is clear from the interview with the teacher that what students meant in their responses is closer to group learning than OL. In this dissertation, however, the author does not consider group learning to be the same as organizational learning. First, because for organizational learning to take place, a special environment has to be created. This environment has to resemble a real organization. No such attempts were mentioned by the teachers or described in the course descriptions. Furthermore, the assessment formula did not include the assessment for groupwork. Although, the teacher explained that some feedback was provided in a form of verbal comments.

Next, using the unique codes students provided in their responses to the survey as well as information about the year they are in and titles of their study programs, students were invited to the interviews via email. The interviews with the students took place almost immediately after their responses were recorded in the survey. Out of twenty students that were invited, seven agreed to participate in the interviews. Data saturation was reached after five interviews as the answers to the questions provided started iterating, but two more interviews took place all the same and produced similar results to the ones before them.

The students, whose responses revealed they experienced the most factors that may impact the development of their OL capability, were invited for the interviews. As far as the formal university courses are concerned, few students have identified learning for OL possibilities in them.

In their responses, all interviewed students identified courses which they thought communicated OL ILO. Moreover, the respondents indicated that they had to work on a task that required simulating an organization. As shown in Table 15, the minority of respondents (the total percentage of respondents who answered “yes” is 22.4%) indicated they had to work on such a task.

Table 15. Students' responses to whether they had to carry out assignments that required simulating an organization (Case 1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No, never	166	76.5	77.6	77.6
	Yes, seldom	18	8.3	8.4	86.0
	Yes, sometimes	21	9.7	9.8	95.8
	Yes, often	9	4.1	4.2	100.0
	Total	214	98.6	100.0	
Missing	System	3	1.4		
Total		217	100.0		

This raised an interesting issue, as to how come some respondents have identified to have worked in a simulated organization, while others did not. To answer this question, several steps have been taken. At the start of each interview, the interviewer explained the purpose of the interview and asked students to explain how they understood the term *organization*. The analysis of the data from the interviews revealed that students failed to see the difference between a group or team and organization. This is particularly interesting as the definitions for all the three terms were provided in the preamble of the survey. When asked how they understood the term *organization*, students answered as follows:

Student *a*: *It is a kind of group of people…*
Student *b: It is like a group only rather in the direction of business…*
Student *c*: *It is a kind of team of co-workers…*
Student *d*: *Is it the same as a group? I think,...*
Student *e*: *A group of employees working on the same project…*
Student *f: People working in the same company…*
Student *g: A company, teams and various groups...*

Then the researcher asked students to remember the instances when they worked on a task that required either an organization to be simulated or working in a group. Students explained that they remembered several instances of working in a group:

Student *a*: *A project, we had our roles… we were responsible for different parts…*

Student *b*: *I think in Software Engineering we worked as groups… I remember some other courses too… worked together with three or four other students. Two never attended (classes)...*

Student *c: In the university courses… yes… Software Engineering… with my group, Audio Technologies too. It was like a project that we had to present. I did not present; I did the technical work…*

Student *d: Yes… we had a few, not in our faculty sometimes, foreign language, even in calculus I think, projects…*

Student *e: We had groupwork in different courses, team presentations especially…*

Student *g: Yes, internship, operating systems, other too, a lot of groupwork really, but you know, sometimes for one class…*

What is more, one of the questions in the survey may prompt the answer as to why some students have recognized to have performed tasks in a simulated organization. It seems that the absolute majority of students, as many as 99.6%, recognize to have worked in groups (see Table 16).

Table 16. Students' involvement in tasks that required groupwork (Case 1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No, never	1	.5	.5	.5
	Yes, seldom	26	12.0	12.0	12.4
	Yes, sometimes	156	71.9	71.9	84.3
	Yes, often	34	15.7	15.7	100.0
	Total	217	100.0	100.0	

Also, it is worth noticing that students did not perceive the assigned groupwork the same way (see Table 16), even though the analysis of the aims and learning outcomes of the study programs as well as data from the interviews revealed deliberately developed educational environments that develop groupwork capability.

Furthermore, the further analysis of the given questions revealed that they had a strong correlation, (see Table 17 for more details). Considering the definitions of the term *organization* provided by students as well as the analysis of their answers to questions three and four in the survey, a conclusion can be drawn that students consider an organization to be the same as a group, i.e. learning occurring in the group may be perceived by students as organizational learning.

Table 17. Correlation between students' involvement in tasks that required groupwork and tasks that required simulating an organization (Case 1)

			Q3	Q4
Spearman's rho	Q3	Correlation Coefficient	1.000	.314**
		Sig. (2-tailed)	.	.000
		N	306	302
	Q4	Correlation Coefficient	.314**	1.000
		Sig. (2-tailed)	.000	.
		N	302	302
**. Correlation is significant at the 0.01 level (2-tailed).				

Interestingly, another correlation analysis has revealed a positive correlation between students engaged in what they referred to as tasks that required groupwork (Q3) and tasks that required an organization to be formed (Q4) and recognizing having developed their OL capability in formal learning (Q65) (see Table 18 below). This

confirms that students think of group as an organization, which points to a gap in knowledge of the management subject.

Table 18. Correlation between student work in small groups and simulated organizations and formally acquired OL abilities (Case 1)

			Q65	Q3	Q4
Spearman's rho	Q65	Correlation Coefficient	1.000	.304**	.302**
		Sig. (2-tailed)	.	.000	.000
		N	217	217	214
	Q3	Correlation Coefficient	.304**	1.000	.336**
		Sig. (2-tailed)	.000	.	.000
		N	217	217	214
	Q4	Correlation Coefficient	.302**	.336**	1.000
		Sig. (2-tailed)	.000	.000	.
		N	214	214	214
**. Correlation is significant at the 0.01 level (2-tailed).					

Assessment of organizational learning

One of the factors that is investigated in this dissertation is the assessment of students' OL capability. Q19 asked students whether the teacher delivering the course assessed their OL or at least provided a verbal feedback. The survey results (see Table 19) revealed that only 40% received any kind of feedback from the teacher.

Table 19. Q19 Assessment of students' OL in university courses (Case 1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	2.8	12.0	12.0
	Probably no	24	11.1	48.0	60.0
	Yes, provided verbal feedback	9	4.1	18.0	78.0
	Yes, it was graded	11	5.1	22.0	100.0
	Total	50	23.0	100.0	
Missing	999	167	77.0		
Total		217	100.0		

However, the correlational analysis has revealed a strong correlation between assessment of student OL (Q19) and whether students believed they developed their OL capability while studying in the study program (Q65), see Table 20 below. This may indicate that those students who have felt they were given feedback on what they perceived as OL may have developed their personal learning environments in a way that allowed the development of the OL capability through formal learning.

Table 20. Correlation between the assessment of students' OL in courses in the selected study programs and the perceived development of the OL capability

			Q65	Q19
Spearman's rho	Q65	Correlation Coefficient	1.000	.486**
		Sig. (2-tailed)	.	.000
		N	217	50
	Q19	Correlation Coefficient	.486**	1.000
		Sig. (2-tailed)	.000	.
		N	50	50
**. Correlation is significant at the 0.01 level (2-tailed).				

Few concluding remarks for the section need to be added. First, although it was revealed in the previous sections that purposefully designed didactic systems which allow to develop students' OL capability do exist, their implementation in the study process often seems to be neglected. At the same time there is little reason not to try to implement such a system. Noteworthy is the fact that most students are involved in groupwork in one way or another, some of the students wrongfully perceive this groupwork as OL, which requires an organization (at least several groups pursuing the same goal). However, noteworthy is the fact that the educator's feedback on OL (even if on a group level) facilitates the development of the OL capability. This once again proves the necessity of implementing a special didactic system for the development of students' OL capability.

Student internships

One of the propositions raised by the author of the dissertation is that the possibilities to include learning for OL into student internships are not fully explored. This was somewhat confirmed by the survey results (see Table 21) where students did not indicate Internships as course units that introduced learning for OL as one of ILOs.

For students to experience OL, they have to feel involved into activities of the organization. The analysis of the survey results revealed that students generally felt they were involved into organization's activities. As many as 74.2% declared that organizations have made them feel involved into organizational activities during their internships.

Table 21. Number of students who felt they were involved in organization's activities during the internship (Case 1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	19	8.8	8.8	8.8

	Probably no	37	17.1	17.1	25.8
	Probably yes	113	52.1	52.1	77.9
	Yes	48	22.1	22.1	100.0
	Total	217	100.0	100.0	

Furthermore, the correlation analysis revealed that those students who felt they were involved in the organization's activities during their internship (Q20) recognized acquiring OL abilities during their formal studies (Q65) (see Table 22). This points to the fact that learning about OL or developing the OL capability in university courses impacts students' possibilities to develop their OL capability in the internship.

Table 22. Correlation between students' involvement in the organization's activities during the internship and acquiring OL competence through formal learning (Case 1)

			Q20	Q65
Spearman's rho	Q20	Correlation Coefficient	1,000	.172*
		Sig. (2-tailed)	.	.011
		N	217	217
	Q65	Correlation Coefficient	.172*	1.000
		Sig. (2-tailed)	.011	.
		N	217	217
*. Correlation is significant at the 0.05 level (2-tailed).				

The document analysis carried out on the study programs IT1 and IT2 revealed that courses Demola internship 2 and Internship in the industry 2 included ILOs CG1 and CG2 that were previously confirmed as those that might hint at learning for OL. Demola internship is an internship that has been introduced at the university as a result of cooperation with Demola Vilnius, who represent the Demola brand in Lithuania. Therefore, the syllabus of the course has not been developed by the faculty. According to the Demola website, the concept of Demola resembles Design Thinking process described in the first part of the dissertation. Demola is an international innovation challenge platform that brings together students and big names from the industry. It is intended to solve real challenges and create new products. The idea of the Demola program is that a multidisciplinary team of university students and facilitators from the industry work together in an innovation challenge set by the company. Challenges that students are faced with are of a complex character and have a number of possible solutions, thus, enable the team members to build unique products.

Further analysis has been carried out on the descriptions of Demola Internship 2 and Internship in the Industry 2 courses. The document analysis revealed that both courses intend to give students a taste of how organizations operate, but OL as such is not mentioned. Demola Internship 2 has somewhat more aims and includes development of soft skills e.g. leadership, creativity and entrepreneurship. While the description of the Internship in the Industry 2 course revolves around more technical

knowledge and abilities, e.g. master software, be able to apply the knowledge of programming or multimedia in practice. Both Internship in the Industry 2 and Demola Internship 2 award 6 credits. The document analysis of Demola 2 course unit revealed that it included learning methods that may involve OL such as design thinking and project-based learning (PBL), Lego Serious Play, etc. To get a better understanding of what Demola internship is, a facilitator from Demola Vilnius was interviewed. The interview focused on several key areas: setting goals (learning and organization's goal), working together (spending time together, developing ties), knowledge creation, making decisions (on the group and organization level).

At the beginning of the interview, the interviewee was asked to explain what Demola is and how it works. First, the interviewee focused on speaking about teamwork and teambuilding:

Not group, we are looking for building a team…
[it is] necessary to build a team…
During this time [first two weeks], it's what they do, they build teams…
[at Demola Vilnius] we don't think groupwork and teamwork are the same, they work as a team…

A faculty member responsible for organizing the Internship in the Industry 2 course was also interviewed to obtain insights into the course. The interviewee mentioned that Demola Internship 2 and Internship in the Industry 2 courses contain a number of differences, mostly due to the fact that Demola internship was not designed by the faculty members. Teamwork was not stressed by the teacher:

The course is for individual work, of course they work… Often work with others…
This [course] is for learning to put theory into practice…
Yes, they work in groups, it depends on a company …
They do not write about groupwork in the report, they write what they did…

The two answers based on the data from the interview reveal the differences in attitudes of teachers towards the importance of teamwork. In this dissertation, the author assumes that teamwork is an important factor for learning OL, in particular, because determines how well and intensively members of the organization exchange tacit knowledge while performing activities within the organization. As revealed by the excerpts from the interview those students who were involved in the Demola internships had more chances to create a real team.

To practice OL students have to be involved in activities of the organization. That means they experience factors that are significant for OL in organizations. For instance, they need to understand and pursue the organization's goal. During the interviews, students were asked whether of the organization formulated a goal. Three students who took Demola internships participated in the interviews as well as four students who did internships in the industry. The responses of students who participated in Demola internships where as follows:

Student *d: We set the aim ourselves…One of the first tasks was to set the goal…*

Student *f: We had the goal formulated on a plank in front of us all the time… The organization didn't really set a goal for us…*

Student *g: They [business organization] gave us a challenge and context, we had to set the goal ourselves… It was nice because we had to set the goal ourselves, difficult though…*

When asked to clarify whether they had their learning goals set for the internship by teachers, students admitted that the goals as such were not set for the internships. Furthermore, after they have started working as a team, they focused on the team goal. Consider the excerpts below which illustrate the point:

Student *d: No one, like, told us what the aim was, it was more like... You write a report later…*

Student *f: Not really, I remember I was choosing between Demola and regular internship, calling companies…*

Student *g: I don't remember that, I think it was so long ago… I thought about what I will have to write in the report, but later I just focused on our goal…*

Similarly, those students who chose to do internship in the industry have also failed to remember any learning goals set by the faculty members. What is interesting though, they seem to remember internships being compared to real work. Consider:

Student *a: I remember I was given a list of companies and I had to call them or email to ask if they had positions available for an internship...*

Student *b: It's like, go get a job. Find a company… Then we speak…*

Student *c: A goal, not specifically, just like try to see what the job looks like in real life...*

Student *e: Write a report? Like that kind of goal?...*

On the other hand, students who did internships in the industry had also a noticeably clear sense of what their organization's goal was. All the interviewees have mentioned being aware of what the company's mission is and what are its aims, see the interview excerpts below:

Student *a: […] and its aim was to maintain leadership in the market…*

Student *b: I was told we're responsible for developing top-notch solutions for Scandinavian markets…*

Student *c: Our department's aim was to ensure that other departments [of the organization] do not experience technical difficulties…*

Student *e: To develop top quality visual designs for the best price…*

What students said during the interview is also reflected in the survey results. The majority of students (80.8%) were aware of the organization's goal (Q22), as many as 98.5% of respondents understood the goal (Q23), and 96.9% were active in pursuing it (Q24). Table 23 presents students' answers to questions Q22, Q23, and Q24.

Table 23. Students' awareness, comprehension, and pursuit of organization's goal

		Count	Column N %
Q22	No	1	0.6%
	Probably not	30	18.6%
	Probably yes	60	37.3%
	Yes	70	43.5%
Q23	No	0	0.0%
	Probably not	2	1.5%
	Probably yes	89	68.5%
	Yes	39	30.0%
Q24	No	0	0.0%
	Probably not	4	3.1%
	Probably yes	90	69.2%
	Yes	36	27.7%

Students' answers also mean that the efforts invested in the internships on students' behalf made them made their experience during the internships feel as authentic organizational experience as possible.

In Demola Internship 2, students did not really have a clearly defined position. They had a licensing system which did not include any names for positions, but they all contributed in accordance to their skill:

Student *d: No, it's not a job, but everybody generated ideas for the solution of the problem…*

Student *f: It's not like you have a job title or something…*

Student *g: In some stages I worked on the code rather than marketing but I still contributed to different phases… not positions, [we] worked as a team and we all contributed but. We developed an app, some people were good at drawing, they produced a paper prototype…*

Internship in the Industry 2 was actually a lot like a real job with a real job title and other attributes of a real workplace. This can be particularly useful for OL, because this way more elements of a real organization are included. However, students noticed that some other employees had a somewhat negative attitude to interns. Consider:

Student *a: Junior developer, a part time job and a part-time salary... But the others just said intern sometimes… I don't think they took me seriously…*

Student *b: I worked as a sound editor for 2 months, actually I was an apprentice sound editor when I started the internship but after the internship I stayed for a full-time position as a sound editor.*

Student *c: A normal job interview, normal position… It's just like there are a lot of interns in such big companies, not all of them stay though…*

Student *e: It is a regular job, I was trainee first two months in my department, but then after the internship I stayed to work full-time… Then [when got a full-time position after the internship] it was much better…*

Demola internship is particularly interesting due to a multidisciplinary and innovative approach it suggests to students. PBL, design thinking, and similar methods are, as discussed in the previous sections of the dissertation, highly beneficial for developing the OL capability. Application of such methods creates favourable conditions for learning OL. First of all, students have to cooperate in order to create organizational knowledge. Second, they spend as much as two months in a small group, thus, hey socialize and have possibilities to communicate their tacit knowledge during this time. It is possible that OL on the scale of organization takes place when students introduce the solution to the problem to the representatives of the organization that came up with it.

During the internships, students worked within a group for two months, during this time the OL processes take place in an organization and students may experience them. Although there are different models that explain how OL takes place, the main model presented in this dissertation is the Model of Dynamic Knowledge Creation developed by Nonaka (1994), also known as the SECI model. The model consists of four stages: Socialization, Externalization, Combination, and Internalization. Four questions were selected to illustrate student involvement in these phases Q27, Q28, Q30, and Q34. Each of the SECI phases had more auxiliary questions, but the author considers the ones presented in Table 24 to be the main questions illustrating the SECI model.

Table 24. Students' answers to questions illustrating the process of creation of organizational knowledge (Nonaka,1994)

		Count	N %
Q27. Can you claim that the members of this unit, including you, have acquired a shared (collective) knowledge that may have remained unnamed but known to everyone?	No	56	20.3%
	Probably not	7	1.5%
	Probably yes	139	57.5%
	Yes	15	4.1%
Q28. Did you try to make collective decisions in the group/division (i.e. did you generate collective ideas) when dealing with important issues for the organization?	No	1	0.1%
	Probably not	7	2.0%
	Probably yes	135	77.6%
	Yes	18	7.0%
Q30. Did your unit present its collective decisions as	No	3	0.5%
	Probably not	109	60.2%
	Probably yes	37	17.0%

proposals to other units/groups within the organization?	Yes	12	4.1%
Q34. Can you claim that new decisions made at this organization's level have become your routine (a standard, something you do by default) after a while?	No	1	0.1%
	Probably not	110	60.9%
	Probably yes	40	18.7%
	Yes	10	3.2%

The analysis of the data in Table 24 revealed that as many as 61.6% of respondents experience socialization during their internships. This is interesting as it reveals that two months may be enough for students to build bonds with their colleagues and start building knowledge assets, for example, trust. 84.6% of respondents demonstrated having experienced the externalization phase. This means that during their internships they managed to convert tacit knowing of the group into some explicit knowledge which may have been manifested as ideas or solutions.

However, only 21.1% of respondents had the chance to experience the combination phase which involves communicating ideas across different departments and making joint decisions. This may be due to the fact that students doing internships may be seen as temporary employees who should not make decisions that may be important for the organization as such but are not going to affect them in the future (unless they keep their jobs after the internship). Finally, 21.9% of respondents claimed to have experienced internalization. This question cannot be interpreted directly and additional explanation is needed. Internalization involves internalizing or implementing new routines or standards (i.e. new organizational knowledge). These are developed over time through the process of dynamic knowledge creation, i.e. the SECI model. The result of this knowledge creation is new organizational knowledge that is explicit, i.e. it is encoded either in writing or other means of recording. It is possible that students have not had a chance to experience internalization due to limited time of the internship.

To investigate whether those students who have experienced the combination phase have also experienced internalization, the correlation analysis was conducted on questions Q30 and Q34. The analysis revealed a strong correlation with Spearman's rho at 600 (See Table 25 below).

Table 25. Correlation between students experiencing combination and internalization phases

			Q30	Q34
Spearman's rho	Q30	Correlation Coefficient	1.000	.600**
		Sig. (2-tailed)	.	.000
		N	161	161
	Q34	Correlation Coefficient	.600**	1.000

		Sig. (2-tailed)	.000	.
		N	161	161
**. Correlation is significant at the 0.01 level (2-tailed).				

During the interviews, students were also asked a series of questions to determine whether they have experienced all OL phases. The analysis of the interview data revealed that all students have experienced socialization, which they mostly communicated through two aspects: time spent working together and bonds made. Consider the following excerpts of students who did Demola internships:

Student *d: After a few weeks it was much easier… I knew I could trust my colleagues with different assignments…*

Student *f: After some time, maybe one week, it was much easier… I felt I knew the people quite well…*

Student *g: We spoke a lot, during different stages, we had coffee, lunch together…*

Almost all students who did the Internship in the Industry 2 experienced the socialization phase. In the socialization phase, individuals channel their tacit knowledge to convert it into group's tacit knowledge. It is important to note that to acquire tacit knowledge communication is critical, but language is not necessary. For instance, when spending time together students may employ observation. Experience is extremely important for acquiring tacit knowledge. Among other aspects pointing to socializations, students particularly stressed the communication aspect:

Student *a: Yeah, we got on well… We still keep in touch... So, yeah, we got on well.*

Student *b: We've spent a lot of time together, especially during the first two weeks when I wanted to learn the ropes...*

Student *c: Just spending time with them working was nice, to see how they managed to focus, and then relax for a moment…*

One of the interviewees pointed out to communication breakdown during the orientation week, which was mandatory for this student, as he had an internship in a big Scandinavian company. The interviewee has also pointed out that things have improved when he was assigned to work in a department. Consider (Student *e*):

It was very difficult, especially during orientation…
I don't think people took me seriously…
[so] it was difficult to find someone to talk to…
In my department, later, at the end of the week it was much better…
I liked working with them, it was pleasant…

The analysis of data from interviews revealed that all students (to a greater or lesser degree) experienced the phase of socialization. It means that all organizations had managed to create the originating "ba" which served as a context to this phase. It is particularly important because students doing internships have to feel that they

belong in the organization and that it is a place where they can feel part of the team and work on pursuing common goals.

Students doing Demola Internship 2 had quite vivid moments of experiencing the externalization phase. Combining knowledge of individual members of the organization to create knowledge that is new to the group is what methods, such as design thinking and PBL, are all about. Externalization requires the expression of tacit knowledge and its translation into comprehensible forms that can be understood by others (Nonaka & Takeuchi, 1995). The sum of the individuals' attitudes and ideas are fused and becomes group's shared mental model. Consider the following excerpts:

Student *d: We were told to look out for these "Aha" moments… We collected all the ideas on sticky notes and wrote them on the board…*

Student *f: We had the same idea, almost at the same time, well I thought about it before… So we put them on the walls, on stickers…*

Student *g: We have put what we have in mind together… We drew a scheme, like a model or something. It was like a snap, oh, that's it, others had it too… And we were at the board drawing and adding ideas…*

In the Internship in the Industry 2 students had to reflect on their internships for a longer time to recognize externalization taking place than those participating in the Demola internship. This may be due to the fact that for students participating in the Demola internship the socialization phase occurred generally faster, they weaved social ties with the others quicker and, thus, learnt from each other. Nonetheless, students have still recognized externalization taking place. Consider:

Student *a: First you just observe what others do and learn, but then at some point I had like, oh, wait, you can do this better, so I made notes for myself…*

Student *b: Maybe after a month [of being in the internship], we worked together for some time, when we actually started delivering some good results, like I have always made notes on my laptop…*

Student *c: I got much better after some time, and he [a colleague] told me like, now you know what we do here, I was like OK, I get it.*

Student *e: We arrived at some ideas as a team, not everything worked though, but still, we didn't make any notes, but we had a board and we wrote on it if it was important…*

Certain conclusions can be drawn based on the data provided in the interviews. First, the dialoguing "ba" which serves as a context to the externalization phase seems to be more successfully implemented in the Demola Internship 2 course. Students who did the Internship in the Industry 2 course had more difficulties experiencing externalization. This may also be due to the fact that student interns are often regarded not as full members of the organization due to limitations of the internship (time constraints, not always clear goals).

Things were much more complicated when it came to combination and internalization phases. Students had difficulties recognizing those and needed much more time for reflection. The combination phase relies on collecting explicit knowledge from the inside (other departments) or outside (other organizations or other

sources of knowledge) of the organization and combining it to create more explicit knowledge that is systemized. Then the created explicit knowledge is disseminated among the members of the organization. In Demola Internship 2, students recognized having experienced the combination phase to some extent, consider:

Student *d: When [we] brainstormed for ideas for implementing the solution to the challenge, we kind of checked what was already known about the issue…*

Student *f: I looked at how I can handle this using the tools I know, and I realized I had to learn more…*

Student *g: When we met [after some time], we had these different ideas from our areas, I thought about an algorithm… We put together what we knew and what we have learnt [individually] and we had some ideas for a solution…*

Students in the Internship in the Industry 2 course have experienced similar problems. During the interviews, it was difficult for them to identify what was it that they would refer to as combination, mostly due to the fact that most of the tasks they were involved in were routine tasks, also as new members of the organization they were not expected to solve problems relevant to the entire organization. However, some of the insights that students provided during the interviews were interesting and deserve attention, consider:

Student *a: Sometimes, I remembered what we were taught at the uni [univerkei], like I was working, and it was like emm, can we do it this way, and he [the supervisor] said yes, it's even better…*

Student *b: Yes, I remember now one situation. We were editing some footage and then we came up with a better way to do the cuts, it was really better and then we told the other editing team about it during a meeting.*

Student *c: Not really, like I never worked on anything that is for an organization, it was more for myself and for my group…*

Student *e: Maybe, I don't really remember now, it was so long ago… I think yes, but I can't remember examples now…*

Nonaka et al. (2000) pointed out that systemizing "ba" that serves as a context to combination has to be very clearly defined by an organization. This may be the reason why students had problems experiencing combination. The investigation into this phase provided findings similar to those observed by Jucevičienė and Valinevičenė (2015). It is very difficult to experience OL on the organizational level. It took a very long time for students to reflect on the combination phase and some would do it only at the very end of the interview saying they have remembered something. This may be influenced by similar factors that came into play as in the case with externalization (limitations provided by the industry). It may also be due to the fact that students do not perceive themselves as full members of the organization and feel that it is not their place to contribute to the decision making on the scale of the organization.

Internalization is a process that deals with the dissemination of the created knowledge throughout the organization. Then this new knowledge is converted to tacit knowledge by the members of the organization and becomes a new routine, standard,

or a procedure. The following reflections from students' interviews depict their experience of the internalization process:

Student *d: I think so, the company invested resources and time and we presented it, so it is probably something they do a lot. And the app [solution] is easy to use…*

Student *f: We hold the licence for the solution, and we get feedback on how the company employs it. It is very important to us to know they use it, we made something they probably use every day…*

Student *g: During the presentation we had a promise that the company will try our solution for a month, we are getting some feedback now and it is positive, they use it…*

Almost all interviewed students doing the Internship in the Industry 2 course have also experienced the phase of internalization. However, sometimes they were on the receiving end of this knowledge, i.e. they internalized it through practice (excluding student b). One student did not remember experiences that would resemble anything like internalization. The other three students mentioned the following:

Student *a: We started using Microsoft, and there was this memo saying that we cannot use other platforms, only Microsoft, but our department had already used by that time teams…*

Student *c: After that they had a message on the board saying how to do it faster, it was mentioned in the meeting and everybody, like I think, did that…*

Student *e: Like the rules for personal data handling, new procedures, you know after GDPR, and everybody had to follow them…*

Not all students who took part in the survey experienced the internalization phase of knowledge creation. This means that the exercising "ba" that is responsible for setting the context for this phase did not always work. Once again, students who were involved in Demola Internship 2 seem to have experienced this phase more clearly than those involved in Internship in the Industry 2.

Assessment of internships

One of the factors that is investigated in this dissertation is the assessment of students' learning for OL. The survey results revealed that the majority of students (91.8%) did not receive any assessment as far as learning for OL is concerned (see Table 26).

Table 26. Assessment of students' OL during internships

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	35	16.1	22.0	22.0
	Probably no	111	51.2	69.8	91.8
	Yes, a verbal comment was provided	5	2.3	3.1	95.0
	Yes, it was graded	8	3.7	5.0	100.0

	Total	159	73.3	100.0	
Missing	999	58	26.7		
Total		217	100.0		

During the interviews, students were also asked whether their OL knowledge and skills were assessed. The interviews revealed that students who did the Demola Intersnhip 2 course received two feedbacks: one from the representative of the company (an expert) which provided the challenge and another from the Demola facilitator (focused on the process of developing the solution); the mark was given on the basis of both feedbacks. Although OL is not mentioned directly, it may be well implied in the assessment. Below are students' comments on the assessment:

Student *d: She [the facilitator] wrote about teamwork and collaboration and ability to work on a project…*

Student *f: We have [been assessed], it was like more of the recommendation… It was important, she [the facilitator] said…*

Student *g: We got this assessment, do not remember now, there was teamwork, I think…*

Students who did Internship in the Industry 2 have also noted that the supervisor of their internship mentioned not only the results they achieved, but also their performance as members of departments. Once again, OL was not mentioned directly, but the feedback may have hinted about it. Consider:

Student *a: We had the performance appraisal for the internship, and the feedback was collected from colleagues in my department, saying I did well in the team…*

Student *b: In this written feedback teamwork was mentioned…*

Student *c: I don't think it was. Working in the team was mentioned though…*

Student *e: One of the points was working with others…*

Overall, although students took part in two different internships both seem to have their merit. Demola Internship 2 seems to be a reasonable choice for experiencing OL through design. However, it lacks one very important component; it is not set in a real organization. Students act as members of the organization and one could argue that it is, in fact, a simulated organization, but it is still different. The Internship in the Industry 2 course is set in real organizations and this allows students experiencing organizational processes first-hand. However, there are doubts as to whether students can be considered full-fledged members of the organization while doing internships. If they perceive this as an employment, then yes. However, if they only consider it a part of the study process, then it is doubtful. The interviews also revealed that if students are to experience OL during internships, it is important for other members of the organization to consider them as such as well.

Summary of the findings

OL mainly means creating knowledge required for achievement of the organization's goals. However, students working in groups in university courses

prioritize their learning goals. Simulated organizations are not employed in the investigated cases. Mostly students are limited to groupwork. No courses in the investigated study programs explicitly communicate the possibility to develop students' OL capability. ILO formulated for internships in the investigated programs do not address the issue of developing students' OL capability. Finally, the majority of respondents have indicated that they have experienced the socialization and externalization stages of the knowledge creation. However, they did not exercise the combination and internalization knowledge creation stages, so the emphasis was made on creating knowledge within the group rather than on the level of the organization.

3.2.1.2. Factors of non-formal and informal learning in potential learning environments

The following research question has been drafted to guide the researcher in investigating how factors influencing the development of the OL capability are manifested in non-formal and informal learning possibilities.

RQ2: How do students experience factors of non-formal and informal learning for OL in the selected study programs?

Revisiting student internships

Student internships are usually considered an element of formal learning. However, if an organization has a system of introducing students to knowledge creation or OL procedures and does so not because it is "prescribed" for students by the university curriculum, such learning shall be considered non-formal or informal, depending on how explicitly it is introduced to interns. At the same time, if students develop their OL capability by getting involved in the knowledge creation processes within the company, they may develop their OL capability through experience (experiential learning) or as a by-product of other activities (incidental learning). Unfortunately, none of the interviewed students mentioned being introduced to the organization's knowledge management systems during their internships. The interviews analysed in the previous section revealed that students did learn OL to a certain extent (mostly group level); this learning was experiential because they learned through their involvement in activities of the organization.

Student organizations

One of the conceptual positions assumed by the author of the dissertation is the concept of lifelong and life-wide learning. It means that students learn everywhere and always and not all the learning has to occur within a formalized education system. Students can experience different types of learning. For example, students are adult enough and have a certain degree of self-directedness to choose means of learning available on the internet (e.g. MOOCs) or participate in some trainings. Furthermore, a number of third- and fourth-year students are already employed, and they may learn from their colleagues at work. In other words, a lot of learning that students are involved in may be either non-formal or informal. Such learning can also take place in various organizations, e.g. student representations where students learn from experience.

However, the survey revealed that only a fraction of students was involved in activities of student organizations. Only 0.5% of respondents were involved in both the student union and art club. 0.9% were involved in activities of the sports club and 8.3% were involved in the activities of the student representation (See Table 27 below).

Table 27. Respondents' involvement with student organizations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	195	89.9	89.9	89.9
	Yes, in student union	1	0.5	.5	90.3
	Yes, in an art club	1	0.5	.5	90.8
	Yes, in a sports club	2	0.9	.9	91.7
	Yes, in a student representation	18	8.3	8.3	100.0
	Total	217	100.0	100.0	

For the purpose of this dissertation, the author has dispatched invitations to come to interviews to all the students who have revealed being involved in university organizations. Unfortunately, the call has only been answered by only three students who have been involved in the activities of student representations at some point of their studies. Hence, out of seven interviewees, three were involved in activities of the student representation. The data acquired from all the interviews was iterative, therefore, it can be considered reliable. None of the students was involved in the activities of the student representation for longer than four terms (two years). One student was involved in the activities of the representation for two terms (Student *a*), one for two and a half (Student *b*), and one for four terms (Student *c*). All of them discontinued their membership at the organization because they found jobs and it became difficult to combine studying, work, and activities at the student representation.

In the beginning of the interview, students were asked to remember how they became members of the organization and they were asked to reflect on their first days as members of the student representation. All respondents had to undergone training (delivered by the president or his vices) and take a test to become members of the student representation. When asked whether the goal of the organization was clearly communicated to them, students agreed. Consider:

Student *a: Yes, we were told we had to help students get the most from being students at (X University)…*

Student *b: Help the students, involve them and have fun…*

Student *c: Yes, I remember it was something like promote high quality higher education, help students with their problems, involve others…*

Students also had clear roles in the student representation. Student *a* was a coordinator for social and academic affairs, student *b* was responsible for marketing, and student *c* was an assistant for events. When asked whether they received any

training in order to be able to do their jobs properly, students explained that there was only initial training, but before they got their positions, all of them helped their predecessors. Also, the initial work was mostly the same for all of them; they filed student complaints and listened to their suggestions, every week their groups had meetings:

Student *a: We all had office hours, [it's] when you meet students. Once a week I have worked with the coordinator for social and academic affairs, she was the third-year student, so I knew I will probably take her place…We had meetings too, every week…*

Student *b: Once a week for two hours I had to sit in our room [office] and talk to students… The rest of the time it's helping with different events, parties and meetings, every week, sometimes twice a week…*

Student *c: I was on a technical team, we were responsible for preparing audio equipment, I liked it, so I didn't want to change… We had meetings too…*

The students said that they had a clear understanding of what they had to do to help their organization and reported pursuing the goals set by the organization rather actively, especially, the first year. Responses below illustrate student involvement in the organization's pursuit of its goals:

Student *a: First year, especially, I was very active. And when I became a coordinator, I did my best, I think I worked more than most do…*

Student *b: I think I was active, I never missed meetings and I always tried to do my best… In marketing we always had to help other groups with their events, order t-shirts and stuff…*

Student *c: I was active, I liked audio equipment, I like wires…*

The responses above illustrate that students were aware of the organization's goals and pursued them in an active manner. Students also had specific roles assigned to them, some of these roles presumed leading parts in the group. However, it is unclear whether an organization organized on the principles of voluntary involvement may actually act the way real private and public organizations outside of the university do. Having this in mind, students were asked a series of questions to determine whether OL took place within that organization. The questions were expected to reveal whether the organization creates conditions for all stages of the SECI model to take place.

The analysis of the interview data revealed that all the students have experienced socialization, which is the process of converting tacit knowledge into new tacit knowledge through shared experiences in day-to-day social interactions. Consider the following interview excerpts:

Student *a: During the first few weeks we communicated a lot, we had to learn for the test [to become a member of the association… We met after classes just for fun, when we could…*

Student *b: We did spend a lot of time… I don't know two, maybe, three hours a week, I think it's a lot… After classes we sometimes went out…*

Student *c: I didn't really know Vilnius at that time, they [colleagues] showed me around… In the office we prepared for the test, discussed meetings and events together…*

The analysis of the data from interviews revealed that all students experienced the phase of socialization. Translated into the framework adopted for this dissertation, this means that all organizations had managed to create the originating "ba" environments, which served as a context to this phase.

Students involved in the activities of the student representation had also experienced the externalization phase. However, it was quite difficult for them to remember all instances. Consider the following excerpts:

Student *a: When we've worked together for some time, we got used to the atmosphere, we started working really well, we developed our procedures for doing things faster, like answering questions on Facebook…*

Student *b: Yeah, I understand, and I think we had this, like, moments… I just don't remember them now. Maybe when we worked together to prepare for the exam, oh yeah, this was like really intense…*

Student *c: [my colleagues] know me pretty well… Many times this happened when we were organising events, we developed a system of marking cables…*

The dialoguing "ba", which serves as a context to the externalization phase, seems to be more difficult for students to perceive. Just like in the case of internships, it was difficult for students to remember instances of externalization at first. The problem is that at the time of the interviews most of the students had not been members of the representation for a long time. None the less, all of the interviewees were able to identify such instances.

The combination phase relies on collecting explicit knowledge from inside (other departments) or outside (other organizations or other sources of knowledge) the organization and combining it to create more explicit knowledge that is systemized (systemizing "ba"). In the student representation, students seem to have focused on their group (department) and little combination (on the scale of organization) was observed by them. Consider the following excerpts:

Student *a: I mean, OK, I know what you mean, but in practice we usually focus on our department. In general meetings, chairs of the departments share their ideas, sometimes...*

Student *b: I don't think so. Oh, sometimes, maybe… But it's really the president who does this, not we…*

Student *c: I know we received these on email. Like, I didn't need this…*

The excerpts above show that students encountered difficulties when they had to work not only in their department but deal with issues across the entire organization. In the student representation, this activity seems to be reserved for the president.

Internalization is a process that deals with the dissemination of the created knowledge within the organization. Members convert this new knowledge into tacit

knowledge and it becomes a new routine, standard, or a procedure. Students identified examples of internalization during their activities in the student representation:

Student *a: We had these descriptions and scripts developed… No, we used them when providing consultations to students, eventually, we knew them very well…*

Student *b: When we had some new competence available for learning, our president would often send us a memo, or present it during a meeting…*

Student *c*: *We developed a scheme for the cables, and it was very useful… I left it for the others in the storage with all the equipment…*

All students experienced the internalization phase, i.e. they put the new knowledge, developed it into practice and exercised it (exercising "ba").

At the end of the interview, students were asked to comment on their experience while being involved in the student representation and on their takeaways from this involvement. Students mostly spoke about the acquired abilities and boosted confidence:

Student *a: Public speaking, you know speaking during meetings… Belonging is very important, I felt I belonged there… Maybe responsibility was also something I learnt…*

Student *b: Working together, not only as a marketing group, but also with the others… Finding the best bargains… Trusting people with tasks…*

Student *c: Working as a team… Responsibility too, I think…*

The analysis of the interviews revealed that students may have experienced OL while involved in the activities in student organizations. However, the correlational analysis of questions 37 (asking whether students felt involved into the student organization activities) and 66 (asking whether students recognized they developed OL capability through non-formal or informal learning) did not reveal a statistically significant correlation (see Table 28).

Table 28. Correlation analysis of students' involvement in student organizations and developing the OL capability in informal or non-formal learning

			Q37	Q66
Spearman's rho	Q37	Correlation Coefficient	1.000	.067
		Sig. (2-tailed)	.	.767
		N	22	22
	Q66	Correlation Coefficient	.067	1.000
		Sig. (2-tailed)	.767	.
		N	22	217

Involvement in work organizations

It is well-known that a lot of students, especially in last years of their studies, already have part-time or full-time jobs. This can have both positive and negative effects for students. For instance, when employed students have a wonderful

possibility to put the theoretical knowledge they learnt during studies into practice. Furthermore, students learn to be responsible, manage their time, and observe deadlines. On the other hand, work and studies can be quite a dangerous mixture, where one component does not agree with the other, this way the quality of studies may suffer. However, employment may also present an opportunity for students to experience organizational learning. According to the results of the survey, as many as 56.2% of respondents have worked for longer than six months while studying at the university (see Table 29).

Table 29. Number of students who have been employed for at least six months during their studies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	95	43.8	43.8	43.8
	Yes	122	56.2	56.2	100.0
	Total	217	100.0	100.0	

Out of seven interviewed students, five satisfied the criteria of working for at least six months. Students were interviewed and the data from the interviews is presented below. In the beginning of the interview students were asked to introduce themselves, to state their position in the company and how long they have worked in the company. The responses were as follows:

Student *a*: Sound editor (8-9 months)
Student *b*: Junior Java developer (7 months)
Student *c*: Front end developer (11 months)
Student *d*: PHP tester apprentice (8 months)
Student *e*: Game engine designer (11 months)

Additional explanation is in order. All work organizations that students were employed in are known to the author of the dissertation. These companies range from a major Scandinavian bank to a well-known game developer. They are highly innovative and mostly operate in the IT sector. The websites of these companies had devoted attention to learning and development, some even communicated having L&D (learning and development) departments. These are knowledge-based companies that recognize the value of knowledge for their businesses.

Students involved in work organizations have to fully understand and pursue the organization's goals. In this way they are able to contribute to the creation of the organization's knowledge pool. Questions Q51, Q52, and Q53 asked students whether work organizations communicated their goal to them, whether they understood this goal, and whether they actively pursued the goal, respectively. The results of the survey revealed that majority of students who were employed in work organization were introduced to, understood, and actively pursued the organization's goal (see Table 30).

Table 30. Students' understanding and the pursuit of work organization's goals

		Count	Column N %
Q51	No	1	0.8%
	Partially	26	21.3%
	Yes	95	77.9%
Q52	No	0	0.0%
	Partially	31	25.6%
	Yes	90	74.4%
Q53	No	2	1.7%
	Partially	38	31.4%
	Yes	81	66.9%

Students' interviews have also confirmed that students were acquainted with the organization's goals and were well aware of what is expected from them and how they have to contribute to achieving this goal. Consider the following excerpts:

Student *a: Well, I stayed in the company where I did my internship, so yes, I have known it since then… But after the internship, the CEO told me what was expected of me…*

Student *b: Absolutely, during the interview… They asked me what their goal was, and I told them… They told me they wanted me to learn from the best, in small projects…*

Student *c: When I met the boss and my manager… They told me, like well, our company provides front end solutions for the biggest companies in Lithuania, we need you to… Help us achieve our goals…*

Student *d: Yes, the lady asked me, what I know about the company, and I told her, and then she told me: "we want to be big not only in Lithuania"…*

Student *e: Generally, yes, we had this goal as a slogan on the wall…*

If students work in an innovative knowledge-based organization, it will create the possibilities for students to get involved in all the phases of the knowledge creation process (SECI). The model consists of four stages: Socialization, Externalization, Combination, and Internalization. Four questions were selected to illustrate students' involvement in these phases Q27, Q28, Q30, and Q34.

Each of the SECI phases had more auxiliary questions, but the author considers the ones presented in Table 31 to be the main questions illustrating the SECI model. Table 31 presents students' answers to some of the questions that illustrate the stages of the SECI model.

Table 31. Students' answers to questions illustrating the process of creation of organizational knowledge (Nonaka,1994) for work organizations

		Count	Column N %
	No	1	0.8%

Q55. Can you claim that the members of this unit, including you, have acquired a shared (collective) knowledge that may have remained unnamed but known to everyone?	Probably no	3	2.5%
	Partially	76	62.3%
	Yes	42	34.4%
Q56. Did your unit try to make collective decisions (i.e. did you generate collective ideas) when dealing with issues important to your work organization?	No	3	2.5%
	Probably no	8	6.6%
	Partially	71	58.2%
	Yes	40	32.8%
Q58. Did your unit present its collective decisions as proposals to other units/groups within the organization?	No	7	5.7%
	Probably no	22	18.0%
	Partially	67	54.9%
	Yes	26	21.3%
Q62. Can you claim that new decisions made at this organization's level have become your routine (a standard, something you do by default) after a while?	No	1	0.8%
	Probably no	24	19.7%
	Partially	72	59.0%
	Yes	25	20.5%

The analysis of the data in Table 31 revealed that as many as 96.7% of respondents experienced socialization in their workplace. As many as 91% of respondents demonstrated that they may have experienced the externalization phase. This means that during their work in the organization, they managed to convert tacit knowing of the group into some explicit knowledge, which may have been manifested as ideas or solutions. Unlike in the case of internships and participation in the student organization, as many as 76.2% of respondents may have experienced the combination phase, which involves communicating ideas across different departments and making joint decisions. Finally, 79.5% of respondents claimed to have experienced internalization.

Such results can have several implications. First, students doing a course in IT field of study programs usually seek employment in IT companies. They do not have to change their profiles or opt for different fields because companies operating in the IT sector offer lucrative jobs. As a rule, these companies are knowledge-based organizations (KBO). In other words, they rely on knowledge to maintain competitive edge (Zach & Michael, 2003). Such organizations create all necessary conditions for knowledge creation to take place.

During the interviews, students were also asked a series of questions to determine whether they have experienced all OL phases. The analysis of the interview data revealed that students have developed strong bonds with members of their departments, they enjoyed communicated with them both on and off duty. Consider the following excerpts:

Student *a: I knew them since my internship, it was much easier for me. They are all my friends. Now one the guys left for another job, and it was like a big deal for us… We meet a lot… We do a lot of work together, I observe them…*

Student *b: We talk a lot… We crack jokes… They help me… When I need to do something new, I ask or watch how they do it… I like the people there… They are really friendly… We often meet outside work… every Thursday we do something for fun…*

Student *c: Three people have left the department since I started working there, I liked them, we could talk about everything I learned from them a lot… New guys are OK too…I have to show them a lot of things… I watch more experienced colleagues, they [new colleagues] observe me…*

Student *d: When I started, I worked in a small room with one other tester… He didn't like speaking too much… Now I work with very friendly guys… We talk a lot, there is a lot I have to learn from them… I try to be nice to them too… I look at how they test tools…*

Student *e: We speak English all the time, they [colleagues] are from different countries… They are fun… They show me what they did in previous work… We communicate… I try to observe when I have time…*

The companies where students worked seem to place a lot of emphasis on teambuilding. All of the interviewed students were happy with the way they were treated in their departments. Which means that all the organizations had managed to create the originating "ba" which served as a context to the socialization phase. All students pointed out the fact that it has helped them to learn from their colleagues.

Externalization involves merging existing tacit knowledge of individual members of the group to create knowledge that is new to the group by the expressing tacit knowledge and translating it into comprehensible forms that can be understood by others (Nonaka & Takeuchi, 1994). Consider the following excerpts:

Student *a: …I made this flowchart to show how to edit sound step-by-step… We use different tools so we need it… Now I can do voices and other guys effects…*

Student *b: I realized I didn't know many things, and my colleague shared his Github account with me… It helped so much…We created another Github account [a storage for code] and we store some of the code we all use there. Not the important one though… It helps…*

Student *c: Knowing which customers prefer what is difficult… We developed this bank of templates… All our works in one place…*

Student *d: We just have different databases as QAs… We put stuff there and we recover it when needed…*

Student *e: It [engine] has many different elements, graphics, sound, mechanics… Everybody knows his/her part… We have a database where we share main concepts for testing…*

The dialoguing "ba" created in the companies has enabled students to combine the tacit knowledge they had and produce explicit (recorder) knowledge, whether in forms of databases or flowcharts. However, students *b* and *d* later said that their supervisors

did not encourage the idea of sharing knowledge on the publicly available platforms and asked them to move it into the company's intranet space.

The combination phase relies on collecting explicit knowledge from the inside (other departments) or outside (other organizations or other sources of knowledge) of the organization and combining it to create more explicit knowledge that is systemized, e.g. two documents are used to create a single comprehensive document. Consider the following examples:

Student *a: During the meeting my supervisor made a slide of the flowchart… It is used a lot now… I know they use it in the X company [company known to the author]… Some of our guys went to work there…*

Student *b: It is now almost a library… We can access it, everybody in our company can… We put several Github accounts together…*

Student *c: Gradients were standardized… We now have a database of gradients for different customers… Programmers have JavaScript databases…*

Student *d: We have adopted standards for QA… I also participated… And developed them based on specifications of our clients…*

Student *e: We have a lot of this I think… Look at any game made with unity… Every engine is a combination of specifications…*

Students were able to provide examples of combination quite easily with the help of some guiding questions. Although it seemed difficult to experience OL on the organizational level during internships, it seems different in work organizations. This shows that in real organizations OL factors are manifested more clearly.

Internalization is a process that deals with the dissemination of the created knowledge throughout the organization and absorption of this knowledge by the members of the organization. This new knowledge is then converted to tacit knowledge by the members of the organization and becomes a new routine, standard, or a procedure. The following reflections from student interviews depict their experience of the internalization process:

Student *a: For me, it is something I know by heart [flowchart]… It is an easier and faster way to do high quality editing…*

Student *b: It is almost eight months that I use this code… I know what I need… I always know where to find it…*

Student *c: We don't look there every day… It is for new employees… We know it…*

Student *d: Every time we make something, we learn it… You can't learn everything by heart… But we remember most of the things… When we have to train someone, we show the database…*

Student *e: I now have two new people I supervise… If I tell them something, I tell it from my head…I know the engines our department developed or updated…*

All interviewed students demonstrated that they have experienced stages of the organizational knowledge creation. During the interviews, students were much more confident speaking about OL at work than trying to come up with examples of OL in their internships, even though some students had internships in their work

organizations (they were employed for full-time or part-time positions after the internship).

Summary of the findings

As was discussed in the previous sections, descriptions of student internships did not include OL as an ILO. However, organizations may have shown initiative to involve students into OL activities; this type of involvement would be considered non-formal (provided organizations have a methodology for involving new members into the knowledge creating procedures). However, none of the interviewed students mentioned being introduced to such procedures. Interviewed students revealed that most of them had been involved in creating knowledge relevant for the organization. In terms of learning, this involvement could be characterised as experiential learning.

Although the analysis of the survey results did not reveal a correlation between involvement in student bodies and development of students' OL capability, during the interviews students were able to identify all stages of the SECI knowledge creation model. Students may have not learnt the related procedures from experience exclusively, explicit learning could have been involved (students preparing for the tests to become members of the student representation). The analysis of the survey results as well as the data from semi-structured interviews revealed that work organizations may as well be that potential learning environment which has the most influence on the development of students' OL capability. While none of the interviewed students mentioned explicitly learning about OL, all of them have clearly experienced the SECI stages of knowledge creation.

3.2.1.3. Entity of factors influencing the development of the OL capability

The following research question has been investigated in this section: RQ3. How do students shape their personal learning environments to develop the OL capability? First, it is important to investigate whether students recognize having developed their OL capability either through formal or informal learning. The survey revealed that a minority of students in Case 1 (17.5%) have recognized developing their OL capability in formal learning (see Table 32 below).

Table 32. The percentage of students who recognized developing the OL capability through formal learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	25	11.5	11.5	11.5
	Probably no	154	71.0	71.0	82.5
	Probably yes	27	12.4	12.4	94.9
	Yes	11	5.1	5.1	100.0
	Total	217	100.0	100.0	

If students did not recognize having developed the OL capability through formal learning, a possibility exists they may have developed it through means that go beyond the formal curriculum. Such means have been discussed in the previous section.

Unfortunately, the analysis of the survey results has revealed that only 23.9% of respondents believed it was the case (see Table 33 below).

Table 33. The percentage of students who recognized developing the OL capability through informal learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	4.6	4.6	4.6
	Probably no	155	71.4	71.4	76.0
	Probably yes	32	14.7	14.7	90.8
	Yes	20	9.2	9.2	100.0
	Total	217	100.0	100.0	

Having analysed the possibilities for formal, non-formal, and informal OL in Case 1, it is also important to notice that in this dissertation, the author aims to capture the holistic, systematic view of OL possibilities. One of the hypotheses set by the author is that when students experience OL in formal learning, it is easier for them to incorporate it into their personal learning environments in non-formal and informal learning. To investigate this proposition, the correlation analysis on questions 65 and 66 was conducted (see Table 32). Question 65 asks students whether they recognize having learned OL through formal learning, and Question 66 asks students whether they recognize having learned OL through non-formal and informal learning.

Table 34. Correlation between the OL capability developed through formal and non-formal (or informal) means

			Q65	Q66
Spearman's rho	Q65	Correlation Coefficient	1.000	.546**
		Sig. (2-tailed)	.	.000
		N	217	217
	Q66	Correlation Coefficient	.546**	1.000
		Sig. (2-tailed)	.000	.
		N	217	217
**. Correlation is significant at the 0.01 level (2-tailed).				

The correlation analysis of the two questions has revealed a positive correlation between the variables. Which makes it possible to assume that those students who have experienced factors influencing students' OL capability in formal learning will seek to incorporate OL into their personal learning environments from other potential learning environments with greater facility. However, as indicated in Table 35 below, very few students have sought to develop their OL capability outside of university studies. Of those who did, as many as 24.4%, chose to seek council of their more experienced colleagues.

Table 35. Means utilized by students to study OL outside of formal learning (Q63)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	142	65.4	65.4	65.4
	Yes, I have done a massive open online course (MOOC) on this topic	2	.9	.9	66.4
	Yes, through communicating and socializing with experienced members of organizations	53	24.4	24.4	90.8
	Yes, our work organization has organized a training on this subject	5	2.3	2.3	93.1
	Yes, our student organization has organized a training on this subject	3	1.4	1.4	94.5
	Yes, the organization where I have had my internship has organized a training on this subject	1	.5	.5	94.9
	Yes, I have studied literature on this subject	2	.9	.9	95.9
	Yes, I have studied the subject employing other available possibilities	9	4.1	4.1	100.0
	Total	217	100.0	100.0	

During the interviews, two students admitted asking their colleagues about process related to knowledge creation in organization. Consider the following excerpts:

Student a: Yes, […] I think I have talked to some of my colleagues about what we do with the new strings or objects…

Student d: Maybe, when I was new, then, yes, I kind of asked about how we register customers and details…

Unfortunately, the excerpts from the interviews do not really illustrate the interest in the process of OL, rather they reflect the interest in the work processes, which happen to be part of OL. This may have been different if students were made aware of what OL while studying at the university. Due to low awareness of what OL is, the majority of students reflected on their activities as members of various organizations only while answering the survey (see Table 36 below).

Table 36. Students' reflections on their activities as members of organizations (Q67)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I have previously reflected on my activities within an organization, acquired knowledge and capability	49	22.6	22.6	22.6
	I do not have experience of being a member of an organization	34	15.7	15.7	38.2
	I have reflected on my activities in an organization only while answering the survey questions	134	61.8	61.8	100.0
	Total	217	100.0	100.0	

Students were also asked whether they reflected on the knowledge creation that took place in either the organizations they were involved with as students or in their work organizations. Students mostly denied reflecting on OL; their previous experience mostly remained tacit until they answered the survey or did the interview with the researcher. Consider:

Student*: a: Not that much… I mean, I have heard about organizational learning when I answered the questionnaire… I do not think I did not need it before, I just did not know, what it was exactly…*

Student*: b: Obviously, now we spoke about it [with the interviewer, during the interview], so I am maybe… [going to] look it up… You do not think about it, it just happens. It happens all the time…*

Student *c: When I saw the questionnaire [was the first time I thought about OL] … It was new, I did not think about it, at work we just do it… Maybe [if I knew about it before] I would have checked it out…*

Student *d: I think it is important for new guys [to know about OL]. Now I think I understand what happened… I am now busy learning something else…*

Student *e: Not really. No… I understood it when I was completing the questionnaire…*

Student *f: Not at the university… Maybe during the internship, someone I think said something about this…*

Student *g: I thought about working with others [in the internship]… I did not know the term… Yes, I did [answer I have reflected on OL while answering the questionnaire]…*

Concluding remarks

The analysis of the survey results as well as data acquired through semi-structured interviews revealed that the correlational analysis points to strong correlation between developing the OL capability through formal and informal (and non-formal) learning. Which points to the fact that while factors influencing the development of students' OL capability in formal learning have little direct effect on the development of students' OL capability because of their limited manifestation, in those rare instances when students experience these factors, in combination with the factors in non-formal and informal learning they may significantly influence the development of students' OL capability. During the interviews, students also revealed that their OL experience mostly remained tacit. However, when they were introduced to the concept of OL, they showed interest in learning more about it. The lack of exposure to OL in formal learning may have limited their possibilities to develop this capability in non-formal or informal learning.

3.2.2. Case 2

Case 2 presents the analysis of factors influencing the development of students' organizational learning capability as experienced by students in two business management programs. As in the case with IT study programs students from two rather similar study programs were selected for the investigation. The factors influencing the development of students' OL capability in Business Management 1 (BM1) and Business Logistics (BM2) study programs are presented by systematically covering possibilities to develop the capability in question through formal, non-formal, and informal learning.

3.2.2.1. Factors of formal learning in educational environments

The first research question guiding the researcher in this section is formulated as RQ1, "How do students experience factors of formal learning for OL in the selected study programs?"

First, the websites of the study programs were analysed to investigate whether OL is included as an intended learning outcome (ILO) in the selected programs. BM1 and BM2 are among the most popular study programmes at the faculty of management at X University.

The business management programs were selected due to the fact that such programs are more likely to have the OL component to them, as these programs are aimed at preparing students for the managerial positions in organizations (usually business organizations) that operate in the emerging (Lithuanian) or well-established (major European Economies) knowledge economies. The selected management programmes have their similarities: both programs award a degree in business management, they have a number of overlapping courses (usually management-related) and these programs have few state-funded positions; they have much fewer students than, for instance, ICT programs. The study programs in the field of business management shall hereinafter be referred to as BM1 (Business Management) and BM2 (Business Logistics).

The university website provides a rather comprehensive look into the study

programs in question. BM1 is a study program with four specializations. None of these specializations hint at knowledge management or OL as such. However, the website offers a list of courses that constitute the program and a brief summary of the courses. Some of the courses focus on management and human resources and may have an OL component to them. Besides that, some of the aims of the study program may also communicate learning for OL possibilities, cf. *be able to implement modern business management solutions*, *be able to work as a team*. However, these do not clearly communicate the ideas of learning for OL, but may hint that OL is involved in achieving these aims.

Furthermore, some courses may also have the OL component to them. These include: Management, HR Management, Strategic Management, Internship in the industry, Innovation Management, Psychology of Management, and Knowledge Management Processes (only available in Information Business Specialization).

The description of the Management course provided on the website does not reveal any possibilities for students to learn for OL. The focus of the course revolves around the introduction of management theories and introduction into management processes; no OL learning outcomes are communicated. The HR Management course introduces students to the main concepts of HR management, significance of HR management for organizations and provides students with knowledge of HR management. OL learning outcomes are not communicated. The Strategic Management course focuses on the strategic management process. Students are introduced to the development of contemporary business strategies and strategic decision making. The course description also mentions change management and change resistance among the topics discussed within the course, hence, further investigation is required to determine whether OL is discussed with the students. Innovation Management is a course available in all specializations and focuses on the development and management of innovations within organizations as well as management of innovation development sites, e.g. science and technology parks. As OL is concerned, among other things, with the development and dissemination of innovations within organizations, it is important to see whether students observed any possibilities for developing OL capability in this course. Psychology of Management is not directly linked to knowledge management processes or OL, however the course description mentions knowledge of internal and external organization's environments, leadership, and culture. Knowledge Management Processes is a course available only in Information Business Specialization. The course focuses on investigating various aspects of information and knowledge management processes. Students are introduced to knowledge management theories and systems. Although OL is not directly mentioned, knowledge management is inseparable from knowledge creation and dissemination, therefore, it is worth investigating whether the course will be recognized by students as influencing the development of the OL capability.

The courses selected for the website analysis have been selected based on keywords that may hint at learning for OL. The investigation of full course descriptions shall be based on the courses suggested to have learning for OL

components by students in the written survey. This may, or may not, include the courses described above.

BM 2 is a study program that focuses on the management of the supply chain and the related processes. The program does not offer any specializations, and the description provided on the website does not directly mention OL as either an aim or a learning outcome. One of the learning outcomes, however, mentions "ability to work in a team", while another communicates "ability to apply modern management solutions" (identical to BM1 program). Change management is also implied in one of the aims communicated by the study program. The website offers a list of courses that constitute the program and a brief summary of the courses. Some of the courses focus on management and human resources and may have an OL component to them. The courses that can potentially help students develop OL are as follows: Management, Innovation Management, and Management Psychology. The website has Management, Internship in the industry, Innovation Management, and Management Psychology courses described in absolutely the same way as in the case with BM1. The website of the study programs does not mention study methods employed in delivering the programs, which might be designed in a way that allows students to develop OL (e.g. consider EDENSOL model).

The website analysis has also revealed that both study programs include internships. The descriptions of the internships in both study programs are nearly identical. The introductory internship seeks to introduce students to practical aspects of their chosen specializations. Whereas the descriptions of the Internship in the industry provided on the website states that this course is an integral part of the study process in both programmes. The aims of the internship are formulated in a way that introduces it a mean of putting the knowledge acquired during the studies to solving real world problems in business organizations. In both cases, the analysis of the full descriptions is required in order to get a better understanding of what these internships are and whether they can be used for the developing the OL capability. Table 37 below presents a short outline of the BM1 and BM2 study programs' website analysis. The possibilities to develop the OL capability in the hidden curriculum were investigated by analysing documents provided on the university website.

Table 37. Possibilities for organizational learning reflected in BM1 and BM2 study programs as communicated on the programs' website

	Formal Curriculum			**Informal Learning**
Indicators / **Study program**	**Aims and learning outcomes**	**Course units, courses, themes**	**Internships in the industry**	**Clubs, other organizations**
BM1	*be able to implement modern management*	Management, Innovation Management, Psychology of	Yes. Introductory internship (fourth term)	Student representation, LinkMenu creativity studio, student art

	solutions; *be able to work as a team*	Management, Knowledge Management Processes, Human Resources Management	and Internship in the industry (seventh term)	clubs (about 25) and sports teams, X University ambassadors club
BM2	*be able to implement modern management solutions*; *be able to work as a team*	Management, Innovation Management, Psychology of Management	Yes. Introductory internship (IV term) and Internship in the industry (VII term)	Student representation, LinkMenu creativity studio, student art clubs (about 25) and sports teams, X University ambassadors club

The students were asked if any of the teachers in the program mentioned OL as one of the ILOs in any of the courses. Students' answers are presented in Table 38. As the analysis of the study program revealed, OL is not included into the list of learning outcomes on either program. Therefore, the majority of students (66.7%) have claimed that OL was likely not introduced as an ILO. As many as 9.5% have been positive that OL was not among the ILO introduced in the course. However, 11.9% of respondents have also mentioned that OL may have been implied. Interestingly, the same percentage of students were sure that OL was mentioned as an intended learning outcome.

Table 38. Number of students who indicated that OL has been introduced as an ILO

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	9.5	9.5	9.5
	Probably not	56	66.7	66.7	76.2
	It was implied, but not mentioned directly	10	11.9	11.9	88.1
	Yes	10	11.9	11.9	100.0
	Total	84	100.0	100.0	

For those students' answers where they answered "yes", they were asked to name the course. Some of the students were unable to recall the courses that included OL ILO, hence, their answers were coded as missing. Answers where students were positive that OL has been introduced as an ILO are presented in Table 39.

Table 39. Courses where students have identified OL ILOs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Business Projects	2	2.4	11.1	11.1
	E-commerce	1	1.2	5.6	16.7

	Economy Policy of the EU	1	1.2	5.6	22.2
	Financial Markets	1	1.2	5.6	27.8
	HR Management	3	3.6	16.7	44.4
	IT	1	1.2	5.6	50.0
	Logistics	1	1.2	5.6	55.6
	Management	2	2.4	11.1	66.7
	Management Psychology	1	1.2	5.6	72.2
	Marketing Research	1	1.2	5.6	77.8
	Modern Economies	1	1.2	5.6	83.3
	Strategic Management	3	3.6	16.7	100.0
	Total	18	21.4	100.0	
Missing	N	66	78.6		
Total		84	100.0		

Most students who answered "yes" to the previous question were able to identify courses where OL has been introduced as an ILO. Courses E-commerce, Economy Policy of the EU, Financial Markets, IT, Logistics, Management Psychology, Modern Economies, and Marketing Research were mentioned by students once. Two students have mentioned Business Projects and Management as courses where OL has been introduced as an ILO. However, three students named HR Management and Strategic Management as a course that included OL ILO.

To investigate this issue, the document analysis of the course descriptions has been conducted. The aim of the Strategic Management course is to "provide a theoretical background of strategic management and comprehensive understanding of the strategic management process. To highlight the knowledge, skills, and resources that will most assist the general manager in making effective decisions and undertaking successful actions. To develop practical skills of strategic management". The aim does not communicate OL in any way whatsoever. However, one of the topics on the list is formulated in the following way: "Strategy development. The development of planned strategy: systems of strategic planning, seminars and project groups, strategy consultants, strategy impacted by the environment. Emerging strategy: distributions means of resources, cultural processes, strategic significance of organizational politics: learning organization, strategic development under uncertainty and complexity, management of strategic development processes". When discussing this topic, students are introduced to the concept of a learning organization. Although learning organization and organizational learning are essentially related, they are not the same (as was explained in the previous sections). Nonetheless, the notion of OL may be introduced during the presentation of this topic.

Another course that was identified by students as having OL ILO was Human Resources Management. The aim of the course reads as follows: "To form theoretical understanding of human resources management and to train to practically apply these skills". Unfortunately, titles of the topics do not imply OL in any way whatsoever. One of the ILOs is stated as "to be able to work in a team", and effective teamwork is

necessary for OL.

The researcher has managed to contact the teacher who delivered the Strategic Management course. The teacher has also delivered Human Resources Management course, thus, the interview covered both modules. Being a professor of Human Resource Management and Strategic Management, the teacher was aware of the notion of OL. However, according to the professor, neither course covered the topic extensively enough. The OL ILOs were also not introduced in the courses. Consider:

No, organizational learning as such we do not discuss… At some point we speak about the concept in strategic management rather that human resource management… One of the topics is concerned with the learning organization and strategic planning of the resources…

The teacher has also mentioned that learning within an organization and needs for competence development are discussed in the Human Resources Management course, but this does not concern knowledge creation (as described by Nonaka, 1993). Consider the following excerpts:

The organization's learning needs are investigated. Some students even choose to do their group projects on this topic…

The group projects mentioned by the teacher present a possibility for practically experiencing elements of OL. The teacher mentioned that during these some groups work rather efficiently to achieve the goal set for the entire group. However, another noteworthy aspect pointed out by the teacher is that the individual learning goals set by the students often prevail over the main goal set for the organization. The problem seems to be that goals of the members of these group often lack direction (as Pointed by Senge, 2006), i.e. their goals are not aligned. Consider:

They have one goal… The problem is that students have different personal goals… For some it is to simply pass, for others it is to get a perfect score… This brings about assessment issues…

This is consistent with findings introduced in the research into possibilities to develop OL capability discussed in the previous chapters of the dissertation as well as research literature (Jucevičienė 2013, Jucevičienė & Valinevičienė 2015; Jucevičienė 2015).

During the interview, the teacher also pointed out that in her opinion, OL is an important capability which should be developed at the university as it helps students perform especially in modern organizations. Unfortunately, due to credit limitations, it is difficult to introduce new topics:

I think it is [important]… It teaches to be a member [of an organization]… But my courses are three credits both… There is not enough time for everything…

Especially in the Master's degree it would be useful… I think they have a course there… We had some students writing theses on knowledge management…

The interview with the teacher revealed that although students did recognize OL as an ILO in both Human Resources Management and Strategic Management courses, it was not really intended by the teacher to communicate this. Students may have been introduced to some theory on OL in Strategic Management module and may have had a chance to experience it in practice in Human Resources Management course. The

latter, however, is difficult to accomplish, as it requires introduction of special environments which facilitate the development of the OL capability (e.g. EDENSOL model).

Next, using the unique codes students provided in their responses to the survey, students were invited to the interviews via email. The interviews with the students took place almost immediately after their responses were recorded in the survey. Out of eighteen students that were invited, six agreed to participate in the interviews.

Those students whose responses revealed that they have experienced the most OL factors were invited to the interviews. Rather few students have identified the possibilities to develop the OL capability in the university curriculum. The students that were selected for the interview revealed having worked in a simulated organization during courses. This puts them among 26.5% of respondents. As shown in Table 38, the majority of respondents, 73.5%, have not been involved in a task that required organization to be formed.

Table 40. During your studies, have you ever worked on a task that required you to work in a simulated organization (usually consists of several groups)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	61	72.6	73.5	73.5
	Yes, seldom	14	16.7	16.9	90.4
	Yes, sometimes	7	8.3	8.4	98.8
	Yes, often	1	1.2	1.2	100.0
	Total	83	98.8	100.0	
Missing	System	1	1.2		
Total		84	100.0		

Much like in the first case discussed in this dissertation, the minority of respondents have identified to have worked in a simulated organization, while others did not. To investigate the issue, several steps have been taken. At the start of each interview, the interviewer explained the purpose of the interview and asked students to explain how they understood the term *organization*. During the interview, some students explained that they saw an *organization* and *group* as similar terms, while the others explained it rather professionally. When asked how they understood the term *organization*, students answered as follows:

Student *h: It is a group…*
Student *i: It is similar to a group… Bigger maybe…*
Student *j: People working together with one goal…*
Student *k: It has a goal, for example, to make profit…*
Student *l: It is a group, it has a structure and a goal…*
Student *m: They can be similar, organizations are usually in business…*

The researcher then reminded students that they have indicated having performed a task that required an organization to be simulated. When students were asked to comment on their answers, they explained that tasks performed in some courses did resemble solving a problem that may actually arise in real organizations. However, most of the described activities reminded groupwork:

Student *h: We worked together as a group to prepare a report. We had a lot of groupwork in different courses…*

Student *i: In human resources we prepared a report together, it was kind of groupwork…*

Student *j: I think the best example was in our internship. We did SMART internship with a group of other students…*

Student *k: In different courses. In logistics, in management… It was like teamwork, we worked in a group, I don't know if it is like an organization…*

Student *l: Management, maybe. We did SMART internship in Linkmenų Fabrikas, I think this is what you are asking about…*

Student *m: I don't know, like, well organization, I don't remember now. I know we had in third year some groupwork…*

It is worth noting that two of the interviewed students have indicated a course that is not presented in the description of either of the investigated problems. SMART internship is an optional course that students may choose to do in their third year. It shall be discussed in greater detail in the section dealing with internships.

The survey data presented in Table 39 may prompt an answer as to why students identified having performed a task that required organization to be formed although neither course descriptions of the courses mentioned by the students nor the interviews revealed such a task to be a part of the course. It seems that 100% of respondents have recognized having worked in groups at some point of their studies (see Table 41). Since the interviewed students have indicated that what they perceived as a task performed in a simulated organization resembles groupwork, it may be deduced that what students experienced was actually groupwork.

Table 41. Students' involvement in groupwork

		Frequency	Percent	Valid Percent
Valid	Yes, seldom	6	7.1	7.1
	Yes, sometimes	56	66.7	66.7

	Yes, often	22	26.2	26.2
	Total	84	100.0	100.0

Furthermore, the further analysis of Q3 (groupwork) and Q4 (a task that requires an organization to be simulated) revealed a positive correlation (see Table 42 for more details). Thinking back on the definitions of the organization provided by students as well as the analysis of their answers to questions three and four, it is possible to conclude that students often fail to make a distinction between an organization and a group, i.e. learning occurring in the group may be perceived by students as organizational learning.

Table 42. Correlation between students' perception of groupwork and work in an organization

			Q3	Q4
Spearman's rho	Q3	Correlation Coefficient	1.000	.244*
		Sig. (2-tailed)	.	.026
		N	84	83
	Q4	Correlation Coefficient	.244*	1.000
		Sig. (2-tailed)	.026	.
		N	83	83
*. Correlation is significant at the 0.05 level (2-tailed).				

Moreover, another correlation analysis has revealed a positive correlation between students engaged in what they referred to as tasks that required groupwork and tasks that required an organization to be formed (Q4) and recognizing having acquired OL skills through formal learning (Q65) (see Table 43 below). Obviously, students consider group learning to be the same as OL; this issue needs to be addressed when analysing and discussing the obtained results.

Table 43. Correlation between student's work in small groups and simulated organizations and formally acquired OL abilities

			Q3	Q4	Q65
Spearman's rho	Q3	Correlation Coefficient	1.000	.244*	.289**
		Sig. (2-tailed)	.	.026	.008
		N	84	83	84
	Q4	Correlation Coefficient	.244*	1.000	.363**
		Sig. (2-tailed)	.026	.	.001
		N	83	83	83
	Q65	Correlation Coefficient	.289**	.363**	1.000
		Sig. (2-tailed)	.008	.001	.

		N	84	83	84
*. Correlation is significant at the 0.05 level (2-tailed).					
**. Correlation is significant at the 0.01 level (2-tailed).					

Assessment of organizational learning

Q19 inquired whether teachers delivering the course that required students to be involved in OL assessed students' OL efforts or at least provided a verbal feedback. The survey results revealed that as little as out of the students who recognized such assignments, 69.5% received some kind of feedback from the teacher. Of those who did receive feedback, 56.5% received a verbal comment while 13% claimed their performance in the task that required OL was graded.

Table 44. Assessment of students' OL in university courses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	2.4	8.7	8.7
	Probably Not	5	6.0	21.7	30.4
	Yes, provided verbal feedback	13	15.5	56.5	87.0
	Yes, it was graded	3	3.6	13.0	100.0
	Total	23	27.4	100.0	
Missing	999	61	72.6		
Total		84	100.0		

Furthermore, the correlational analysis has not revealed a correlation between the assessment of student's OL (Q19) and whether students believed they developed their OL capability while studying in the study program (Q65) (see Table 45 below). This may indicate that assessment of student's OL in the selected study programs was not a significant factor influencing the development of students' OL capability.

Table 45. Correlation analysis between the assessment of students' OL in courses in the selected study programs and perceived development of the OL capability

			Q65	Q19
Spearman's rho	Q65	Correlation Coefficient	1.000	.189
		Sig. (2-tailed)	.	.389
		N	84	23
	Q19	Correlation Coefficient	.189	1.000
		Sig. (2-tailed)	.389	.
		N	23	23

Student internships

One of the propositions raised by the author of the dissertation is that the possibilities to develop the OL capability in internships are not fully used. This was further confirmed by the results of the survey (see Table 46) as students did not indicate internships among courses that introduced OL as one of the ILOs. However, internships can be useful for developing the OL capability as they take students to real organizations that solve real problems and create organizational knowledge in the process.

For students to develop their OL capability, they must feel involved into activities of the organization. According to the survey results, students generally felt they were involved into organization's activities. As many as 76.2% declared that organizations have made them feel involved into organizational activities during their internships.

Table 46. Q20. Number of students who felt they were involved in the organization's activities during the internship

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	9.5	9.5	9.5
	Probably not	12	14.3	14.3	23.8
	Probably yes	39	46.4	46.4	70.2
	Yes	25	29.8	29.8	100.0
	Total	84	100.0	100.0	

However, the correlation analysis revealed no correlation between the involvement in the organization's activities during students internship (Q20) and the development of the OL capability through formal learning (Q65) (see Table 47).

Table 47. Correlation between student involvement in the organization's activities during the internship and developing the OL capability through formal learning

			Q65	Q20
Spearman's rho	Q65	Correlation Coefficient	1.000	.065
		Sig. (2-tailed)	.	.560
		N	84	84
	Q20	Correlation Coefficient	.065	1. 000
		Sig. (2-tailed)	.560	.
		N	84	84

The analysis of the survey data in Table 45 implies that students do not think they have developed the OL capability during internships. However, since internships are valuable organizational experience, it is still important to investigate them. Besides, the ILOs identified as hinting at OL are linked with Internship in the industry module.

The document analysis carried out on the BM1 and BM2 study programs revealed that Internship in the industry lasts eight weeks and awards twelve ECTS credits. The aim of the course is formulated the following way: "consolidate the theoretical knowledge of the analysis of the enterprises economic performance and management processes, gain skills in planning, organizing, coordinating and analysing an enterprise, organization or business unit". The document analysis has revealed that the course intends to give students a taste of how organizations operate, but OL as such is not mentioned.

During the interviews, students have also mentioned Smart Internships. Smart Internship has somewhat more aims and includes development of soft skills e.g. leadership, creativity, and entrepreneurship. Smart practice is concerned with teamwork, consolidation of theoretical knowledge and its implementation for solving practical problems presented by a real business company, and getting to know the company: its goal, organizational management structure, human and other resources, services and goods it provides, and technologies it uses. Much like Demola internship in IT programs, it employs Design Thinking, Lego Serious Play, MethodKit, Business Model Canvas methodologies to solve challenges presented by the companies and relies on implementation of radical collaboration strategy (each team consists of students from different fields or even areas of studies).

To get a better understanding of what Smart internship is, the facilitator and coordinator of this internship was interviewed. The interview focused on several key areas: setting goals (learning and organization's goal), working together (spending time together, developing ties), knowledge creation, making decisions (on the group and organization level).

At the beginning of the interview, the interviewee was asked to explain what Smart internship is and how it works. The interviewee emphasized the synergy between the industry and research institution (university), possibility for students to display creativity and entrepreneurship as well as innovative thinking:

Challenges are discussed with the representatives of the companies, our stakeholders. We invite them here… It's [smart internship] all about allowing students to develop a solution for a real problem provided by the industry. It is a chance for them to step out of their comfort zones, to display how creative they are. They [solutions] usually make sense business-wise, they are marketable.

According to the interviewee, OL or creation of organizational knowledge has not really been intended in the Smart internship, but it occurs naturally:

Yes, when designing the internship, it was envisioned as a place where students create new knowledge, new solutions. Students will always create new knowledge. It is an ill-structured problem they are solving… They have to present their solutions to the organization, it is the most important part… I guess it becomes new knowledge for that organization.

Internship in the industry course, on the other hand, was described as an opportunity for students to put their theoretical knowledge they gained during classes into practice. Real organizations serve as a context for this exercise. The teacher

responsible for the internships was interviewed and explained that teamwork or OL is not the main result of the internship, but it is a desired one:

Depends on a company really, yes, they become real members of the organization. They are expected to show what they have learned in their studies.

OL, I don't know. Well, they work in a real organization, so that is important…

If they mention an example [of OL or elements of OL] in their report, then yes, we will provide some feedback for that.

Next, students were interviewed to see how they perceived possibilities to develop the OL capability through internships. Two students who did Smart internships (*a*, *b*) and four students who did internship in the industry (*c*, *d*, *e*, *f*) were interviewed. To develop the OL capability, students need to be involved in activities of the organization, that means they experience factors that are significant for OL in organizations. For instance, they need to understand and pursue the organization's goal. When speaking at the interviews, students reflected on their experience during the internship:

Smart internship

Student *i: First, we got acquainted with the organization itself, the company, its facilities, goals and structure. I think the problem was quite clear, and the goal as well.*

Student *k: When we had our problem, we headed to the company itself to see how it is organized. We had a tour, the manager told us some facts about it. We learnt what the company wanted us to do, and we learnt what their goals was.*

Student *i: I understood the organization's goal. My goal? To help as much as I could to solve the problem. Yes, I guess I wanted to get a good mark, but solution [of the problem] was more important, I think.*

Student *k: I thought it was really nice to work on this problem. Yes, we knew how it would help the company. For me it was important to feel I contributed…*

Internship in the industry

Student *h: I think it was during the interview, that I… that he [the manager] mentioned the company's goal and told me about the company and what they want me to do… they said learn…*

Student *j: I looked it [the goal] up on the internet. I thought they would ask me at the interview… Manager explained what their goal was… I said OK, then he asked how I could contribute, I said I don't know yet…*

Student *l: I did my internship in my workplace, so it was nothing special. I now our company, I know the goals. My personal [goal], I don't know, when I work, I think what I can do for the company.*

Student *m: A big company, yes. We had the interviews, then they called me and said I'm in. I know the aims and possibilities of the company, but I worked in different departments [during the internship] so the aims were different…*

Students' responses confirm the findings from the survey where questions Q22, Q23, and Q24 inquired whether the organizations where students did their made its goal known to them (Q22), whether they understood the goal (Q23) and whether they actively contributed to pursuing the goal (Q24). The survey results for questions Q22, Q23 and Q24 are presented in Table 48.

Table 48. Students' awareness and pursuit of the organization's goals

		Count	Column N %
Q22	No	3	4.7%
	Probably not	11	17.2%
	Probably yes	20	31.3%
	Yes	30	46.9%
Q23	No	0	0.0%
	Probably not	2	3.9%
	Probably yes	24	47.1%
	Yes	25	49.0%
Q24	No	0	0.0%
	Probably not	4	8.0%
	Probably yes	28	56.0%
	Yes	18	36.0%

As many as 78.2% of respondents claimed that the organization communicated its goals to them. 96.1% maintained they understood the goals and 92% actively pursued this goal. The results of the survey revealed that students were actively involved in the organization's activities and contributed to achieving its goals.

It is also important to look at how students managed to harmonize their personal learning goals with the organization's goal. When asked to clarify whether they had their learning outcomes set for the internship by the university, some students who did internship in the industry admitted that the goals as such were not set for the internships. The students who did Smart internship were clear about the learning goals:

Student *i: Our mentor [name of the teacher] gave us very clear vision. She said it is about teamwork and shared responsibility as much as it is about solving the problem. Our result had to be like, like a poster, kind of.*

Student *k: Yes, we had a meeting with the facilitator, she told us the main aim of the internship and how were going to be assessed… She said that not only the result, but how we achieve it was also important…*

Student *h: I don't remember, probably no. Maybe for some students.*

Student *j: Yes, we had a slide with the results, I think it was in this course…*

Student *l: I don't know. Maybe, for me it was just work. I know my job quite well, I didn't need someone to tell me what I will learn, but I think there were some meetings.*

Student *m: I don't remember anyone telling about the internship, I remember I asked for the list of the companies with emails and phone numbers.*

The interview results suggest that students doing internship in the industry module were less aware of the learning outcomes set for their internships. None of the interviewed students have mentioned OL or knowledge creation as a learning outcome set for the internship. The survey results also point to the fact that OL was not include mentioned as an ILO for the internship (see Table 49 for more details).

Table 49. OL as an intended learning outcome in student internships

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	1.2	1.6	1.6
	Probably not	44	52.4	68.8	70.3
	Not directly, but it was implied	11	13.1	17.2	87.5
	Yes	8	9.5	12.5	100.0
	Total	64	76.2	100.0	
Missing	The aims were not presented	20	23.8		
Total		84	100.0		

To take advantage of the organizational experience, it is also important to have a clearly defined role in the organization. In Smart Internship, students did not really have a clearly defined position. They worked as a team and carried out different roles when it was required:

Student *i: We did not have positions, we did different things. One day we brainstormed, next day made decisions… Together…*

Student *k: Not positions… but we knew who's good at what. And often we'd say something like, 'that's something you do'…*

Internship in the industry was a lot like a real job with a real interview, job title and other attributes of a real workplace. This can be particularly useful for OL, because this way more elements of a real organization are included. Consider:

Student *h: First, I started as an assistant in sales, then I was transferred to after-sales.*

Student *j: I started my internship as a trainee, but after some trial period I was transferred to digital sales.*

Student *l: I am a sales manager with my company.*

Student *m: I worked in logistics, as a junior manager.*

Smart Internship is particularly noteworthy due to the innovative approach it suggests to students. It employs methods such as problem-solving, PBL, and design thinking, discussed in the previous sections of the dissertation, that could prove highly beneficial for developing the OL capability. Moreover, application of such methods creates favourable conditions for developing the OL capability. First, students have to cooperate to create organizational knowledge. Second, they spend a significant amount of time in a small group, so they socialize and have possibilities to

communicate their tacit knowledge during this time. OL on the scale of the organization may take place when the solution to the problem is introduced to the representatives of the organization.

During the internships, students worked within a group (in case of Smart internship) or an organization (in case of internship in the industry) for two months. During this time, OL processes take place in an organization and students may be able to experience them.

In this dissertation, the author is particularly interested in how knowledge is created through the Model of Dynamic Knowledge Creation developed by Nonaka (1994), also known as the SECI model. The model consists of four stages: Socialization, Externalization, Combination, and Internalization. Four questions were selected to illustrate student involvement in these phases Q27, Q28, Q30, and Q34.

Each of the SECI phases had additional questions in the survey, but the author considers the ones presented in Table 50 to be the main questions illustrating the SECI model.

Table 50. Students' answers to questions illustrating the process of creation of organizational knowledge

		Count	Column N %
Q27. Can you claim that the members of this unit, including you, have acquired a shared (collective) knowledge that may have remained unnamed but known to everyone? (Socialization)	No	0	0.0%
	Probably no	11	17.2%
	Probably yes	38	59.4%
	Yes	15	23.4%
Q28. Did you try to make collective decisions in the group/division (i.e. did you generate collective ideas) when dealing with important issues for the organization? (Externalization)	No	1	1.6%
	Probably no	9	14.1%
	Probably yes	41	64.1%
	Yes	13	20.3%
Q30. Did your unit present its collective decisions as proposals to other units/groups within the organization? (Combination)	No	4	6.3%
	Probably no	37	57.8%
	Probably yes	16	25.0%
	Yes	7	10.9%
Q34. Can you claim that new decisions made at this organization's level have become your routine (a standard, something you do by default) after a while? (Internalization)	No	0	0.0%
	Probably no	45	70.3%
	Probably yes	9	14.1%
	Yes	10	15.6%

The analysis of the data suggests that as many as 82.8% of respondents experience socialization during their internships. This points to the fact that two months may be enough for students to build bonds with their colleagues and create knowledge assets, for example, trust. This is also noteworthy because during this time students get the opportunity to observe their colleagues, communicate with them and, thus, learn. Vygotsky (1976) would refer to these more experienced colleagues as more knowledgeable other (MKO). 84.4% of respondents experienced the externalization phase. Hence, during their internships they managed to convert tacit knowing of the group into explicit knowledge which may have been manifested as ideas or solutions.

However, only 35.9% of respondents experienced the combination phase which involves communicating ideas across different departments and making joint decisions. This may be due to the fact that students doing internships may be accepted by others as temporary employees who should not make decisions that may be important for the organization as a whole. Finally, 29.7% of students have experienced internalization. Internalization involves introducing or implementing new routines or standards. This new organizational knowledge is explicit, i.e. it is encoded either in writing or other means of recording. It is possible that the majority of students have not had a chance to experience internalization due to a limited time of the internship.

To investigate whether those students who have experienced the combination phase have also experienced internalization, the correlation analysis was conducted on questions Q30 and Q34. The analysis revealed a strong correlation.

Table 51. Correlation between students experiencing combination and internalization phases

			Q30	Q34
Spearman's rho	Q30	Correlation Coefficient	1.000	.419**
		Sig. (2-tailed)	.	.001
		N	64	64
	Q34	Correlation Coefficient	.419**	1.000
		Sig. (2-tailed)	.001	.
		N	64	64
**. Correlation is significant at the 0.01 level (2-tailed)				

During the interviews, students were also asked some questions to determine whether they recognized having experienced all the OL phases. Analysis of the interview data revealed that the informants have experienced socialization. Consider the following excerpts of students who did Smart internships:

Student *i: We have spent, I think, quite a lot of time working as a team. In Linkmenų Fabrikas, especially, we had a room, where we worked… Sometimes [we met in non-formal settings], we went for a coffee… Naturally [you learn from the others], you work together for so long, you see how they do things, sometimes we talked about different ways of completing some tasks…*

Student *k: Definitely a lot. Especially in the last weeks, but first weeks too. When I work, I try to see what the others are doing. Sometimes, you get a good idea from them…*

Students who did Internship in the industry felt they spent enough time with the other members of their departments too. Spending time together students may employ observation. Experience is extremely important for acquiring tacit knowledge and while observing other more experienced colleagues, students can be said to learn from MKO:

Student *h: It was OK. First, I was a little uncomfortable speaking to other members of the department, but eventually it was OK. We had coffee together, I saw how they communicate with the customers with the manager…*

Student *j: Not bad, generally, OK, I think. Everyday [learnt from the others], I mean in our line of work it is important to know how to manage our customer accounts.*

Student *l: You know, now others learn from me. Yes, we spend a lot of time, especially with the sales people.*

Student *m: It [learning from others] is very important, a lot of people work in this [logistics] department. There were several different systems and people worked with hundreds of clients. We spent a lot of time with some people in our department, they were very experienced, I tried to learn as much as possible.*

The analysis of the data from interviews revealed that all students experienced the organizations had managed to create the originating "ba", which served as a context to this phase. It is particularly important, because students doing internships have to feel that they are members of the organization and that it is a place where they can feel a part of the team and work on pursuing common goals. Student *l* has had the internship in his/her work organization, therefore, may have experienced the factors differently and his data shall be excluded from the rest of this section.

Students doing the internships have also experienced the externalization phase. Combining knowledge of individual members of organization to create knowledge that is new to the group is what methods, such as design thinking and PBL, are all about. Externalization requires the expression of tacit knowledge and its translation into comprehensible forms that can be understood by others (Nonaka & Takeuchi, 1995). The sum of the individuals' attitudes and ideas are fused and become the group's shared mental model. Consider the following excerpts:

Student *i: All the time… we made these notes with what we came up with so far…*

Student *k: You mean like putting down ideas…yes, we did it all the time, we have them even now somewhere… to know who suggested what and we came up with the solution.*

In Internship in the industry students had also experienced transformation of tacit knowledge into explicit. Consider:

Student *h: Yes, many times, I made sticky notes…*

Student *j: Different, we had sections for customer remarks, so I wrote comments about my customers, like my colleagues did…*

Student *l:* ---

Student *m: Yes, I made notes on what customer is better off with what transport company, I made a list of contacts for different problems… My manager told me to [make the list].*

Both students in Smart internship and Internship in the industry experienced internalization. Knowledge that was previously tacit and resided in their minds was now coded as either notes or schemas on the board or forms containing useful information.

Students have found experiencing the combination phase somewhat more complicated. Combination involves fusion of two sources of explicit knowledge to produce a new source of explicit knowledge. Students experienced some difficulties recognizing such instances and needed much more time for reflection. The combination phase relies on collecting explicit knowledge from the inside (other departments) or outside (other organizations or other sources of knowledge) the organization and combining it to create more explicit knowledge that is systemized. Then the created explicit knowledge is disseminated among the members of the organization. These are the insights of students from Smart internship:

Student *i: We had to check our idea against the existing solutions, and then we have introduced some changes into it…*

Student *k: OK, so we had this idea and we needed to see if it could work with the equipment that the company had. We needed the specifications and some technical documents…*

During the interviews, students were able to identify the point where this new knowledge was distributed to other members of the organization:

Student *i: When we designed the solution, we sent the ideas to managers of the responsible divisions and to our facilitator. They sent us some feedback; it was like testing… We also presented the poster with our solution to the employees of the company.*

Student *k: I think it was when we had to present the poster in the company; and there were managers and employees, they liked the idea…*

Students who did Internship in the industry were mostly involved in routine activities and it was difficult for them to identify instances of combining explicit knowledge to create new explicit knowledge. However, after taking some time to reflect on it, students managed to identify several cases of such knowledge combination, although they were not aware if it was disseminated to other departments at the organization:

Student *h: I do not remember, at that time I did not really care about this. I was an intern, so I did what I had to do…*

Student *j: In digital [sales] we had this FAQ [frequently asked questions] so I wrote one question when I started working there, and nobody answered, so I just wrote*

the answer myself, for future interns… I don't think this is not something you need when you work for a year or so, but for interns, it is useful… Yes, but everyone can see it…

Student *l:* --

Student *m: I mean, I guess, I just added my notes to the database, it is always there. But I think only new employees ever look at it at all…*

Nonaka et al. (2000) explain that systemizing "ba" serves as a context to the combination phase. As shown in the interview extracts, students knew how to systemize their knowledge. Interviews with students who did Internships in the industry revealed that not all of them were aware of how and whether the knowledge was disseminated to other departments or members of the organization. Such findings are consistent with those described by Jucevičienė and Valinevičenė (2015) who discovered that it is very difficult for students to experience the combination phase of the OL. Interestingly, students involved in Smart internship had easier time recognizing the combination phase and were able to point to combination and dissemination of knowledge without interviewer's intervention.

Internalization deals with the dissemination of the created knowledge throughout the organization. Through practice, this newly created explicit knowledge is converted to tacit knowledge by the members of the organization, i.e. it becomes a new routine, standard, or a procedure. The following reflections from students' interviews depict their experience of the internalization process:

Student *i: We have made a presentation of the solution and explained how this solution ties with the organization's activities. It is something that affects their daily activities… I do not know if they use it already, but that would be it [answered a guiding question].*

Student *k: I think so [members of the organization use the solution regularly], it is a little difficult to know, I did not hear from the organization since.*

Internalization was also experienced by students doing Internship in the industry, but to a somewhat lesser extent. Moreover, students were usually the ones who had to internalize new knowledge developed by other employees:

Student *h: When you come to work, start using the systems, and then you get a memo, like in after-sales we get new rules for customer support, so you learn them, because you do it every day.*

Student *j: Maybe, I can't remember now. (10 minutes later into the interview, when speaking about job) Oh, yes, we had IT guys develop a new function, like a help button for customer calls, we got used to it pretty quickly.*

Student *l:* -

Student *m: Yes, for example, managers have a list of priority customers, and you just know that you serve them first, they are important for the company…*

The exercising "ba" that is the context for setting the context for the internalization phase was experienced by students when they had to internalize knowledge developed by other employees. Generally, students involved in Smart

internship and students doing internships in the industry experienced internalization differently. Those involved in Smart internship were the ones who developed new knowledge for the organization to internalize, those who did internships in the industry were the ones who had to internalize knowledge developed by other members of the organization. Therefore, it may be assumed that different internships influence students' OL learning, but in different ways. The development of the OL capability is related to experiential learning while practising organizational knowledge creation in the internship organization, rather than pursuing OL learning outcome set by the university before the start of the internship. It has been also discovered that the aim of OL was not set for the students in the investigated cases.

Assessment of internships

One of the factors that is investigated in this dissertation is the assessment of students' efforts to develop the OL capability. The survey results revealed that the majority of students (91.8%) did not receive any assessment as far as learning for OL is concerned (see Table 52).

Table 52. Q35. Assessment of students' OL capability in internships

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	18	21.4	29.5	29.5
	Probably no	30	35.7	49.2	78.7
	Yes, verbal feedback was provided	6	7.1	9.8	88.5
	Yes, it was graded	7	8.3	11.5	100.0
	Total	61	72.6	100.0	
Missing	999	23	27.4		
Total		84	100.0		

During the interviews, students revealed that in Smart internship they were offered feedback from the person who coordinated the internship. Their knowledge creation activities were not graded. Although OL was not explicitly mentioned, the feedback provided by the teacher may imply that knowledge creation was a significant part of the internship. Below are students' comments on the assessment:

Student *i: We had the poster, and first the facilitator spoke about how we created something that does not exist anywhere else [new knowledge], then how important it was to work as a team with students from other study programs.*

Student *k: It was [mentioned], something about working as a team, combining what we know from different areas… No, not marked. I think it was the solution and the poster that were marked…*

Students who did the internship in the industry had an assessment form filled out by their supervisors in the company. Students received the mark that has been influenced by the supervisor's report and they had to prepare reports as well. The reports prepared by the students did not focus on OL and were more concerned with

other functions carried out at the organization of the internship. The supervisor's feedback presented some comments on students' teamwork. Consider:

Student *h: We had and appraisal by the manager, but it was more about how well we did in our job. I think the ability to work in a team was also mentioned. Report, not really, it is more on the organization's structure, my duties, etc.*

Student *j: Work in a team [was mentioned], and generally some other comments about performance during the internship. Report, yes, I had to write [one]. I think no [did not write about OL].*

Student *l:* -

Student *m: I do not remember that well, but I think yes [teamwork was mentioned].*

Overall, although students experienced different approach to internships, both seem to have their advantages. Smart internships allow students to experience OL through problem solving but limits group's involvement in the activities of the organization. During this internship, the interviewed students acted as members of the simulated department but had little interaction with other departments within the organization.

The Internship in the industry course is set in an organizational setting. This allows students to experience organizational processes first-hand. However, it is unclear whether students perceive themselves as members of the organization, knowing that this is still part of the learning process. For organizations, it is also important to create conditions that allow students to feel they fully belong to the organization as its members.

Summary of the findings

The investigation into possibilities of formal learning for developing students' OL capability revealed that students can experience OL through the formal learning process, i.e. while studying in a study program. Two possibilities were investigated in this dissertation: (1) students develop the OL capability in a course that is specifically designed for developing the OL capability or includes didactic systems (methods) which allow for such development to take place; and (2) students develop their OL capability while doing internships in organizations. The research revealed that X University does not devote enough attention to developing students' OL capability in various courses in BM1 and BM2 study programs. None of the learning outcomes investigated in the study programs directly communicated OL as an ILO in BM1 and BM2 study programs.

The document analysis of the courses that were selected as implying the development of the OL capability revealed that these do not have the aim to develop students' OL. Besides the scope of the investigated courses is usually limited to three ECTS credits, which imposes limitations on the type of assignments teachers may wish to include into their courses. Despite this, the interviewed teachers explained they did employ didactic systems which created favourable environments for students to develop their OL capability. However, students did not perceive these activities as those that required OL. Therefore, they thought of them as groupwork. Those students, who recognized being involved in OL, have also mentioned receiving

feedback on developing their OL capability; teachers mostly provided verbal feedback, which may imply that formative assessment has been employed. Furthermore, students who did internships did not always experience all of the knowledge creation processes. This may have occurred because they did not yet perceive themselves as "full" members of the organization while doing internships. However, students investigated in Case 2 generally felt more accepted during the internships.

The document analysis and interviews with the teachers teaching in BM1 and BM2 study programs did not indicate any clear examples of courses that were designed with the intention of developing students' OL capability. None listed the OL capability as one of the ILOs. Although some tasks may have included OL elements, the survey results showed that the majority of students failed to recognize them as such, as only 32.2% of respondents have recognized the creation of organizational knowledge or OL as a learning outcome, a bigger half of who (17.9%) said it was implied rather than stated directly. As far as the internships are concerned, the description provided for the course Internship in the industry did not include OL as one of the intended LOs. The teacher mentioned it was a welcome outcome, but not a formally required one. However, students who did Smart internships seem to have undergone the process of knowledge creation and dissemination step-by-step. The interview with the teacher who designed Smart internship course revealed that the creation of new organizational knowledge is an inseparable part of the process.

3.2.2.2. Factors of non-formal and informal learning in potential learning environments

To guide the investigation into possibilities for students to develop the OL capability in non-formal and informal learning, the following research question has been formulated: RQ2. How do students experience factors of non-formal and informal learning for OL in the selected study programs?

Revisiting student internships

The rationale for revisiting internships in this section has been presented in Case1. While internships are a part of the study plan and rightfully belong in the formal learning section, unless the OL capability is described as one of the aims or intended LOs, and is assessed, it probably occurs as either non-formal or informal learning (see Section 3.2.1.2 in Case 1 for more details).

Student organizations

Student organizations are based on the principle of voluntary involvement, nonetheless, they present a possibility for students to develop their OL capability. However, only 10.7% of respondents were involved in a student representation, as little as 2.4% were involved in activities of a sports club or another organization that was not mentioned in the survey (see Table 53 below). This data is insufficient to make any assumptions about the development of students' OL capability in the mentioned organizations.

Table 53. Q36 Student involvement in student organizations (Case 2)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	71	84.5	84.5	84.5
	Yes, I have been a part of a student organization that has not been mentioned	2	2.4	2.4	86.9
	Yes, I have been a member of a sports organization	2	2.4	2.4	89.3
	Yes, I have been a member of a student representation	9	10.7	10.7	100.0
	Total	84	100.0	100.0	

As was previously mentioned, the selection process for the interviews was focused on students who have communicated the most possibilities to experience OL in formal, non-formal, or informal learning. Unfortunately, the call has only been answered by only two students who have been involved in the activities of student representations at some point of their studies. The data acquired from all the interviews was iterative, therefore, it could be considered reliable. None of the students were involved in the activities of student representation for longer than three terms (a year and a half). One student was involved in the activities of the representation for two terms (*a*), and one for three (*b*). Both discontinued their membership at the organization because they started jobs and wanted to focus on studies more.

In the beginning of the interview, students were asked to remember their recruitment to the student representation. The respondents mentioned they had to undergo a training that culminated in an examination. Based on the results of the examination, students were suggested positions at the representation. Productive involvement in organization's activities implies pursuit of the organization's goal. When asked whether the goal of the organization was clearly communicated to them, students agreed. Consider:

Student *j: Yes, the head of our chapter has presented it during the first chapter meeting, also the president has welcomed us and mentioned the goal during the first general meeting.*

Student *k: Yes, it was mentioned, I think… During the recruitment process.*

After the induction training and testing, both students were involved in day-to-day activities of the student representation Moreover, initial work was mostly the same for all of them; they collected feedback from students, helped organizing events, and similar tasks. Every week students had to participate in meetings of their groups. Occasionally, they participated in the general meeting:

Student *j: Meetings with students at the office, then we had department meeting. Every two weeks or every month, I don't remember, we had general meetings.*

Student *k: Yes, sometimes just doing office hours at the representation office, we spent more time during events, meetings too.*

Students mentioned having a clear idea of what the organization's goals was and understanding the goal, during the first year of their involvement they had actively pursued the organization's goal:

Student *j: Yes, it was clear to me… I was active, I think the first term, and the second. But then the head of our branch had to resign, and I did not want to get too involved anymore.*

Student *k: I mean, yes, of course [I understood the goal]… I think I was active all the time, we had some changes, but I was active. I quit when I could not be active anymore.*

While the responses provided by students show active involvement in the organization's activities, it is unclear whether an organization organized on the principles of voluntary involvement may actually act the way real private and public organizations outside of the university do. To determine this, students were asked a series of questions to investigate whether OL took place within that organization. The questions were expected to reveal whether the organization creates the conditions for all the stages of the SECI model to take place.

The interviewees revealed that the organization created conditions for its members to socialize (enabled originating "ba"). Students have spent a lot of time together and had a chance to learn from their more experienced colleagues (MKOs). Consider the following interview excerpts:

Student *j: I was never alone at first. I worked with my colleague, she has shown me the scripts for solving different problems, shown me how to handle inquiries. I just watched and learned…We had a slogan at the representation, it said teamwork first.*

Student *k: We spent a lot of time together, especially when preparing events… It was really nice, because we were always in pairs or groups, older students sometimes worked individually… I tried [to learn by observation], sometimes we had problems where we were unable to help immediately, those were addressed for the president of vice presidents.*

The interviews revealed that the organization managed to create environments which allowed students to socialize with other members of the organization and learn by observing them. In terms of the perspective on OL adopted in this dissertation, the organization had managed to create the originating "ba" environments, which served as a context for socialization phase to take place in.

Students involved in the activities of the student representation had also experienced the externalization phase. Consider the following excerpts:

Student *j: Discussing? Yes, a lot. It happened all the time with the new, and I guess, old members as well, we notice something new, or something that can be improved and we ask about it, we made notes with questions for the head of the*

chapter… [we put them]on the notice board for example. We put ideas on the sticky notes too.

Student *k: We discussed the problems we had a lot [of discussions]. We had a lot of notes, is that it? If we found something new and important.*

All the interviewed students mentioned they experienced externalization. It is enabled through the dialoguing "ba", which allows converting mental models and ideas into common terms and concepts. Externalization refers to the conversion of tacit knowledge into explicit, therefore some knowledge artefact is created, in this case it was manifested by the notes on the wall.

The combination phase relies on collecting and combining (systemizing) explicit knowledge from inside or outside the organization to create more explicit knowledge. The context for this knowledge conversion is called systemizing "ba". In this phase new explicit knowledge is combined from two instances of explicit knowledge (e.g. two documents) and disseminated within the organization. In the current situation, students found it difficult to remember such instances. Consider the following excerpts:

Student *j: Yeah, but you know this is something coordinators [managers of different departments] do. I do not remember anything like that… We shared ideas, but I do not remember them being discussed in general meeting for example or made into some document…*

Student *k: This is more of coordinators job, we brainstorm for ideas, we see, we sometimes get the memos [on the decisions made].*

Although students did not experience the combination phase in the role of knowledge creators, they have witnessed instances of combined explicit knowledge disseminated to them. As the combination phase deals with the transfer of knowledge between different groups, it is likely to be more characteristic for the administration of the student representations to deal with it.

Through iterative practice of new knowledge, it is internalized by members of the organization and, thus, becomes their tacit knowledge. It becomes a new routine, standard, or a procedure. Students identified examples of internalization during their activities in the student representation:

Student *j: I think when they send scripts for new situations, how to handle some issues, and eventually we learn them as we use them, like we do not need the descriptions anymore…*

Student *k: Yes, we had this several times. We needed to adapt our rules to GDPR, so there were changes, now we just take it for granted…*

At the end of the interview, students were asked to comment on their experience while being involved in the student representation and on their takeaways from this involvement. Students mentioned the following:

Student *j: I think teamwork and ability to organize my time. Also, some specific things, like the GDPR for instance and how it works…*

Student *k: Responsibility and active involvement…*

The analysis of the interviews revealed that students may have experienced OL while involved in the activities in student organizations. However, the correlational analysis of questions 37 (asking whether students felt involved into student organization's activities) and 66 (asking whether students recognized they acquired OL abilities through non-formal or informal learning) did not reveal a statistically significant correlation (see Table 54). Once again, it is possible to observe that students do not relate their activities related to creating organizational knowledge (hence, related to OL) in an organization to learning, i.e. they do not recognize learning in their OL activities, thus, they fail to see that these activities develop their OL capability. To the student the exercised OL remains tacit.

Table 54. Correlational analysis of students' involvement in student organizations and developing the OL capability through informal or non-formal learning

			Q37	Q66
Spearman's rho	Q37	Correlation Coefficient	1.000	.503
		Sig. (2-tailed)	.	.080
		N	13	13
	Q66	Correlation Coefficient	.503	1.000
		Sig. (2-tailed)	.080	.
		N	13	84

While students did experience certain stages of OL while involved in the activities of student representation, it seemed like it was limited more to the group level. As pointed out in both interviews and the survey, students struggled when it came to the combination phase of the SECI model. Overall, students seemed happy with their experience at student representations, but their commitment was not long-lived. Both students agreed they actively contributed to the organization's activities during the first year only. While students did not receive any formal guidelines as far as creation of knowledge is concerned, they seem to have learned it while working with their colleagues; this resembled learning by doing without reflecting on one's activities or recognizing learning.

Involvement in work organizations

It is quite common for third- and four-year students at the investigated university to have jobs. Although it may have some negative effects on their academic performance, involvement in real organization may be useful for developing students' OL capability. According to the results of the survey, as many as 65.5% of respondents have worked for longer than six months while studying at the university (see Table 55).

Table 55. Number of students who have been employed for at least six months during their studies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	29	34.5	34.5	34.5
	Yes	55	65.5	65.5	100.0
	Total	84	100.0	100.0	

Out of the interviewed students, five satisfied the criteria of working for at least six months. However, the data presented in this section is obtained from four of those interviews. As the fifth interviewee worked in a bar, mostly individually, and did not produce any useful insights during the interview. In the beginning of the interview students were asked to introduce themselves and state their position in the company as well as how long they have worked in the company. The responses were as follows:

Student *h*: CSR (customer service representative) in a call centre (eight months)
Student *j*: After-sales manager in digital retail (almost seven months)
Student *l*: Sales manager (more than a year) (a case that was presented, yet not discussed during in the internships section).
Student *m*: Specialist in logistics (11 months)

The companies where students are employed are known to the researcher. One company is a Lithuanian branch of major multinational (student *h*). The company where the student *j* is employed is well-established in the Lithuanian market. The student *j* has chosen to work in a position similar to one he did internship in, but in a different company. The student *l* has worked in his organization the longest of all the students but did not want to disclose what the company was. It is known that the interviewee was responsible for sales of computer hardware.
Students involved in work organizations have to fully understand and pursue the organization's goals and be able to create knowledge necessary for achieving this goal. Questions Q51, Q52, and Q53 inquired whether work organizations communicated their goal, whether respondents understood this goal, and whether they actively pursued it, respectively. The results of the survey are presented in Table 56.

Table 56. Students' understanding and contribution to achieving the organization's goals

		Count	Column N %
Q51	No	1	1.8%
	Partially	11	20.0%
	Yes	43	78.2%
Q52	No	0	0.0%
	Partially	14	25.9%
	Yes	40	74.1%
Q53	No	2	3.7%
	Partially	18	33.3%
	Yes	34	63.0%

Student *h: Yes, it was stressful several times. We had an extensive training before we started working for the project, and every time they said we had to do something to achieve our goal… Customer satisfaction in the shortest service time… I tried, I think I was really active…*

Student *j: During the interview, then during the meeting with the regional manager who supervised all after-sales in Lithuania… I was active, I was on probationary period and I wanted to the job. I am active now because I want a promotion, so, yes…*

Student *l: Yes, we want to establish ourselves in the market, we want to be among the five strongest suppliers in Lithuania for hardware and cartridges. I always try to reach my targets…*

Student *m: Yes, in the meeting on my first day they told me what the department wants to do, what are our goals with different regions. I mean, I could try harder, but it depends on a season anyway…*

It is worthwhile to investigate students' work in organizations because those may have enabled the employees to create knowledge by creating conditions favourable for that. In other words, environments enabling knowledge creation through the SECI process may have been created. To see whether students had a chance to participate in these phases, answers to four questions from the survey (Q27, Q28, Q30, and Q34) were analysed. The questions were selected as they reflect the essence of each phase. Table 57 presents students' answers to some of the questions that illustrate the stages of the SECI model.

Table 57. Students' answers to questions illustrating the process of the creation of organizational knowledge for work organizations (Case 2)

		Count	Column N %
Q55. Can you claim that the members of this unit, including you, have acquired a shared (collective) knowledge that may have remained unnamed but known to everyone?	No	1	1.8%
	Probably not	4	7.3%
	Probably yes	24	43.6%
	Yes	26	47.3%
Q56. Did your unit try to make collective decisions (i.e. did you generate collective ideas) when dealing with issues important to your work organization?	No	2	3.6%
	Probably not	4	7.3%
	Probably yes	23	41.8%
	Yes	26	47.3%
Q58. Did your unit present its collective decisions as proposals to other units/groups within the organization?	No	0	0.0%
	Probably not	14	25.5%
	Probably yes	25	45.5%
	Yes	16	29.1%
Q62. Can you claim that new decisions made at this organization's level have become your routine (a standard, something you do by default) after a while?	No	0	0.0%
	Probably not	15	27.3%
	Probably yes	25	45.5%
	Yes	15	27.3%

The analysis of the data in Table 55 revealed that 90.7% of the surveyed students experienced socialization in their work organizations. 89.1% of respondents demonstrated they may have experienced the externalization phase. This means that during their work in the organization they managed to convert tacit knowing of the group into some explicit knowledge, which may have been manifested as ideas or solutions. 74.6% of respondents have experienced the combination phase, which involves communicating ideas across different departments and making joint decisions. Finally, 72.8 % of respondents claimed to have experienced internalization in their work organizations.

The results imply that the companies where students work create conditions necessary for OL, i.e. they create environments which allow the SECI phases to take place. To further investigate students' experience in the companies, particularly how they experienced the SECI phases, a series of questions was asked during the interviews.

The interviews revealed that students have developed strong bonds with members of their departments, they enjoyed communicated with them both on and off duty. They learnt from their colleagues by observing how they performed day-to-day actions. Consider the following excerpts:

Student *h: During the training not so much. But when I started working in a project, in my team, I had to communicate to people a lot, because some of the situations were not discussed in trainings… I watched how people answer the phone calls… Tried to memorise the phrases for different situations.*

Student *j: We have a nice team… Yes, I can say we are friends. We talk to people who are dissatisfied with something they bought, so I learnt to be careful, how to explain the returns procedure to them… I learnt it from them [my colleagues].*

Student *l: I work with another sales manager. There used to be three of us, so we were like rally good palls. I talked to them a lot, I watched how they closed the deals, there a lot of tricks in our job…*

Student *m: Yes, it [communication and observation] is very important. You cannot learn these things from books. I think we have a good relationship with the other members [of the department].*

The students emphasized communication with the other members of the team and observation as valuable learning tools. The interviewees were particularly sure it was important for beginners who seek to learn the ropes. The data from the interviews confirmed that students have experienced the socialization phase, hence, the organizations they were involved in have managed to create the originating "ba", which serves as a context to this phase.

Externalization involves synthesizing the existing tacit knowledge of individual members of the group to form knowledge that is new to the group by the expressing tacit knowledge and translating it into comprehensible forms that can be understood by others (Nonaka & Takeuchi, 1994). Consider the following excerpts:

Student *h: Sometimes, during the meetings we make suggestions about improving some scenarios or some processes… No [we do not submit it in writing], but I think the manager puts it down.*

Student *j: Yes, we need to [make suggestions to improve performance of the group]… We get a lot of different product, every month we talk with my colleagues about the products that people return the most and we make a suggestion, for example, to remove them from sales…*

Student *l: Yes, yes. During meetings for example, we update product descriptions, because we have different insights from our customers…*

Student *m: I think when we update the database with contacts of drivers and details about the trucks, we do it quite often…*

Students managed to identify instances of converting tacit knowledge into explicit. The interviewed students explained that such instances were well-known to them as they have experienced them many times before.

The combination phase relies on collecting explicit knowledge from the inside (other departments) or outside (other organizations or other sources of knowledge) the organization and combining it to create more explicit knowledge that is systemized. This knowledge is disseminated to other members of the organization via a selected medium. Consider the following answers:

Student *h: Yes, we have a system where we share all the documents, it is accessed via the intranet and all the teams working on this project can access it.*

Student *j: Emails, but mostly we make the changes visible for all in the database.*

Student *l: If it is about the specifications, then we change description in the database. But we send emails to the sales teams as well.*

Student *m: Yes, it is a big company. We have database, we have the intranet for sharing such information. But if it is sensitive, like customer details, we save it only where managers can access them…*

Most of the students mentioned that combination occurred in some digital medium. In fact, research literature often describes the "systemizing ba" as "cyber ba" (Young, 2012). The interviewed students described the ways that knowledge created by their department was shared with other departments or vice-versa, how knowledge created by other departments was disseminated to their team (department).

Internalization is a process that deals with the dissemination of the created knowledge throughout the organization and absorption of this knowledge by the members of the organization. This new knowledge is then converted to tacit knowledge by the members of the organization and becomes a new routine, standard, or a procedure. The following reflections from students' interviews depict their experience of the internalization process:

Student *h: Sometimes, we need to learn these things, like you know sit down and read and try to remember. Sometimes we just open the scenario during a phone call, and we have prompts… You remember them eventually.*

Student *j: When we are sent new descriptions, we have to learn about the products, but after a few situations with them, you more or less get it, and then you just remember these things, but it is always there.*

Student *l: We access the new items through the database, first you need to know what their weaknesses and advantages over the competition are. But you remember these things after some time… In hardware components it actually changes quite often, so you need to learn the specifications from time to time.*

Student *m: We work with different destinations, I mean, you learn some of these things [drivers, transport companies], but you can always check the database…*

All the interviewed students demonstrated that they have experienced stages of organizational knowledge creation to a greater or lesser extent. It is worth mentioning that at the time of the interview, two of the interviewed students (*h* and *m*) were employed in large companies that have branches in different countries. To compete on the international scale, these companies rely on creation of new knowledge and its effective dissemination inside the organization.

Summary of the findings

The investigation into possibilities of non-formal and informal learning for developing students' OL capability revealed that students can experience OL through means other than formal learning. Although organized on voluntary principles, as the analysis of the interviews revealed, student organizations investigated in this dissertation (student representations) functioned on a surprisingly high level, and in this respect somewhat reminded professional business or public organizations. This means, that such organizations have a potential of introducing a knowledge management system. The data from the interviews revealed at least several reasons for such successful performance: (a) the selection of the members into the organization is rather strict and involves a testing procedure, where a regular member must score 70+ points out of a hundred and a coordinator of a department has to score 80+ points out of a hundred; (b) the structure and hierarchy of the organization is clear; and (c) the internal learning potential of the organization is utilized efficiently, e.g. more competent members of the organization train the newcomers, coordinators of departments often have deputies who learn from them and in case of their resignation take their places.

The interviews have also revealed that students in these organizations have built a shared vision. The data from the interviews revealed that students engaged in activities of the student representation learn from their more knowledgeable colleagues (more knowledgeable other) through observation, communication, and performing activities with them. The processes of the creation of organizational knowledge that were described by students during the interviews revealed that these take place similarly to knowledge creation processes in work organizations. The interviewed students did not mention participating in any kind of training where they would specifically learn about knowledge creation or develop the OL capability. All of the knowledge creation that students reflected on during their interviews was learned through experience by either creating new knowledge themselves or

internalizing knowledge created by other members of the organization. A work organization seems to have an upper hand among the informal learning settings discussed in this dissertation (student representation vs work organization) as students have identified the stages of SECI knowledge creation process with greater facility than in the student representation.

3.2.2.3. Entity of the factors influencing the development of students' OL capability

The following research question has been investigated in this section: RQ3. How do students shape their personal learning environments to develop their OL capability? First, it is important to investigate whether students recognize having developed their OL capability either through formal or informal learning. The survey revealed that the minority of students in Case 2 (32.2%) have recognized developing their OL capability in formal learning (answers "yes" and "probably yes") (see Table 58 below).

Table 58. The percentage of students who recognized developing the OL capability through formal learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	8.3	8.3	8.3
	Probably no	50	59.5	59.5	67.9
	Probably yes	23	27.4	27.4	95.2
	Yes	4	4.8	4.8	100.0
	Total	84	100.0	100.0	

If students did not recognize having developed the OL capability through formal learning, a possibility exists they may have developed it through means that go beyond the formal curriculum. Such means have been discussed in the previous section. The analysis of the survey results has revealed that only 40.5% of respondents believed they developed the OL capability through informal learning (see Table 59 below).

Table 59. The percentage of students who recognized developing the OL capability through informal learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	4.8	4.8	4.8
	Probably no	46	54.8	54.8	59.5
	Probably yes	25	29.8	29.8	89.3
	Yes	9	10.7	10.7	100.0
	Total	84	100.0	100.0	

One of the propositions investigated by the author is that when students experience OL in formal learning, they identify non-formal and informal possibilities for developing the OL capability with greater facility. This shapes students' personal learning environments that allow for further development of the OL capability.

To investigate this proposition, the correlation analysis on questions 65 and 66 was conducted (see Table 60). Where question Q65 asks students whether they recognize having learned OL through formal learning and question Q66 asks students whether they recognize having learned OL through non-formal and informal learning.

Table 60. Correlation between OL abilities acquired through formal and informal (or non-formal) means

			Q65	Q66
Spearman's rho	Q65	Correlation Coefficient	1.000	.673**
		Sig. (2-tailed)	.	.000
		N	84	84
	Q66	Correlation Coefficient	.673**	1.000
		Sig. (2-tailed)	.000	.
		N	84	84
**. Correlation is significant at the 0.01 level (2-tailed).				

The correlation analysis of the two questions has revealed a positive correlation between the variables. Thus, it is possible to assume that those students who have experienced factors influencing the OL capability in formal learning, transformed some of the educational environment created by the educator into their personal learning environment and recognized possibilities to develop their OL capability in non-formal and informal learning with greater facility. Hence, even though factors influencing the development of students' OL capability in formal learning are largely ignored by the formal curriculum, they may influence the development of students' OL capability. In other words, when students know what to look for in terms of the possibility to develop their OL capability, they will find it within the university or outside it.

During the interviews, students have also been asked whether they tried investigating the subject of OL individually and whether experiencing the processes of the creation of organizational knowledge has stimulated their interest to investigate OL further. Student responses were as follows:

Student *h: No, I have not [used any means to learn more about OL]. Maybe I did not know how to name what was happening… Yes [now I know what it is called], maybe I will watch a video on YouTube or something.*

Student *i: Not really. I have never really thought about it. No. Maybe… [it is useful]. I understand how it works, I think… Now.*

Student *j: I do not think so. I sometimes learn things about sales and management, and I know the term [knowledge management], maybe I have read about it or watched a tutorial… But I think I can learn this at work.*

Student *k: No. I don't know, I have never thought about it as something I needed. I have really heard about it [OL, knowledge management] for the first time when*

answering the survey… I think it is interesting… Maybe I am going to study it in Master's degree.

Student *l*: *I remember we have discussed it (in one of the courses)… About knowledge and how organizations create it, I think a little, maybe we did not call it organizational learning…*

Student *m*: *Not that I remember… We spoke about learning needs and how to plan them… When I was answering the questionnaire (I reflected on it)… I will read about it… Google at least…*

The data obtained from students' interviews (only the most active students have been selected for the interviews) shows that students were mostly interested in the topic of OL. When they reflected on it, they recognized OL elements in their experience at work or in student organizations. Unfortunately, since they had no prior knowledge of the concept (from e.g. formal learning), they were unable to identify OL as a phenomenon they would like to study further and did not seek to do so. In the survey students 44 % indicated they tried to investigate OL individually (see Table 61 below).

Table 61. Means utilized by students to study OL outside of formal learning (Q63)

		Frequency	Percent	Valid Percent
Valid	No	47	56.0	56.0
	Yes, I have done a massive open online course (MOOC) on this topic	1	1.2	1.2
	Yes, through communication and socializing with experienced members of organizations	24	28.6	28.6
	Yes, our work organization has organized a training on this subject	4	4.8	4.8
	Yes, our student organization has organized a training on this subject	2	2.4	2.4
	Yes, the organization where I have had my internship has organized a training on this subject	1	1.2	1.2
	Yes, I have studied the subject employing other available virtual possibilities	5	6.0	6.0
	Total	84	100.0	100.0

Students may have had less problems developing the OL capability if they were aware of the concept. This may have induced students' reflections on their experience in organizations.

Students' responses to Q67 (whether students reflected on their activities in organizations) revealed that the majority of students have only considered their involvement in the organization when answering the questionnaire (see Table 62 below).

Table 62. Students' reflections on their activities as members of organizations (Q67)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I have previously reflected on my activities within an organization, acquired knowledge and capability	27	32.1	32.1	32.1
	I do not have experience of being a member of an organization	6	7.1	7.1	39.3
	I have reflected on my activities in an organization only while answering the survey questions	51	60.7	60.7	100.0
	Total	84	100.0	100.0	

Furthermore, the interview data has demonstrated that students may have been interested in investigating the possibilities to further develop their OL capability, but they struggled finding the right words to name the concept. This begs the question would it be different if OL was communicated as an intended LO in one of the courses or the internships?

Concluding remarks

Similarly to Case 1, the analysis of the data acquired through the students' survey revealed a strong correlation between developing the OL capability through formal and informal (and non-formal) learning. This once again stresses the significance of developing students' OL capability in formal learning, which in combination with the factors in non-formal and informal learning may significantly influence the development of students' OL capability. The analysis of the data from students' interviews also revealed that their OL experience mostly remained on the tacit level. Students mentioned reflecting on the phenomenon of OL only while competing the questionnaire, which once again points to the possible lack of attention to OL in formal learning as educators did not induce student reflection. The correlational analysis also pointed to strong correlation between developing the OL capability through formal and informal (and non-formal) learning (similarly to Case 1), yet again pointing out the necessity for the holistic approach to the problem of developing students' OL capability.

3.2.3. Cross-case analysis of Case 1 and Case 2

The purpose of this cross-case is to compare Case 1 and Case 2 investigated in the dissertation. Depending on the amount and peculiarities of the data collected, the propositions shall be investigated either individually or a few at a time (e.g. propositions P1 and P2 can be investigate using the same data in both cases).

Where there are no clear differences between Case1 and Case2, the cross-investigation shall be limited to the descriptive analysis. If the cross-case analysis

reveals quantitative differences between Case1 and Case2, statistical significance of these differences is going to be tested.

The first proposition (P1) investigated in the dissertations is formulated as: "Factors influencing the development of students' OL capability manifested in the university's educational environments (formal learning) do not entirely match the factors that come into play in knowledge-based organizations".

The second proposition (P2) is formulated as: "The university curriculum (formal education) only partially focuses on the development of the OL capability: the emphasis is made on the group level rather that organization level (several groups working together)".

The evidence for investigating the proposition was collected from different sources: documents (study program descriptions), semi-structured interviews with teachers teaching in the selected programs in cases 1 and 2, and survey of the students.

In knowledge-based organizational settings, two factors are particularly important for organizational learning: (a) *it occurs on the level of the organization as an entity* and (b) *the members of the organization create knowledge necessary for achieving the goal set by the organization*. The content analysis of the documents in both cases revealed that the learning outcomes that were related to OL elements focused mostly on groupwork and emphasised the externalization stage of the SECI model. None of the mentioned learning outcomes work on the level of the organizations. These outcomes communicated the students' abilities to assume shared vision on the level of the group. Unlike in Case 1, a particular course was devoted to knowledge management in Case 2. However, the course was optional and was only available in one of the specializations. Much like in Case 1, certain courses in Case 2 tacitly implied OL but did not communicate it directly. The documents presented on the websites did not offer a detailed description of the methods employed in the study programs delivered in Cases 1 and 2, but it was obvious that none of them employed didactic models which would allow for an organization to be simulated (e.g. EDENSOL).

Students' surveys also revealed that a fraction of students remembered working on a task that required for an organization to be formed (22.1% in Case 1 and 26.5% in Case 2). An organization is essential for practicing OL, so simulating one may be an essential factor that would allow students to experience OL similarly to how they would in a real organization. Students were asked to identify the courses that in their opinion required an organization to be simulated. To investigate whether these courses actually took advantage of didactic approaches that allowed for students to experience OL, teachers delivering the courses were interviewed. The interviews revealed that neither in Case 1 nor in Case 2 teachers did not employ any specific approaches that would allow students to develop their OL capability. The interviewed teachers mentioned that they tried to ensure successful groupwork, but students did not really work as an organization (that consists of several groups united by the organization's goal). The teacher in Case 1 mentioned that he thought learning to work in a group is important, but even then students tended to cooperate rather than collaborate, i.e. their groupwork was based on splitting work among members where each group member

does his/her bit rather than discussing and implementing decisions together. Work in groups may be useful as the first two stages of the SECI knowledge creation model (socialization and externalization) revolve around groupwork. However, this also means that students are unlikely to experience combination and internalization phases.

The fact that neither of the interviewed teachers employed a special didactic system in their courses means that students perceive their involvement in these activities as studies and naturally prioritized their learning goals over the goals of the group. In Case 1, the teacher agreed that students did not always actively pursue the goals set for the group and would much rather do their parts of the assignment individually better, for the purpose of receiving a better grade. The teacher interviewed in Case 2 has also mentioned that while students as a group had one common goal, all of them were driven by their personal learning goals.

Summarising, it is evident that the triangulation of the data and cross-case analysis proves **the proposition P1: "Factors influencing the development of students' OL capability manifested in the university's educational environments (formal learning) do not entirely match the factors that come into play in knowledge-based organizations".**

The analysis of the data from both cases also proves **the proposition P2 "The university curriculum (formal education) only partially focuses on the development of the OL capability: the emphasis is made on the group level rather that organization level (several groups working together)".** Due to the lack of the dedicated didactic system, the formal university curriculum is focused on group learning at best. Students, on the other hand, sometimes perceive these groups as organizations.

The proposition P3 is formulated as follows: "Faculty members teaching courses that foresee OL as an intended learning outcome create educational environments for the development of students' OL capability on the formal learning level, but not all the students transform them into their personal learning environments". The triangulation of the data from the document analysis and student survey as well as interviews with the teachers and students in both cases have revealed that none of the courses delivered in the study programs investigated in Case 1 and Case 2 had OL capability listed as either an aim or an intended learning outcome in neither of the investigated programs. However, 22.4% of respondents in Case 1 and 26.5% of respondents in Case 2 indicated they have been involved in an assignment that required an organization to be formed. These students indicated receiving feedback from teachers on their OL capability. In Case 1, 40% of respondents who claimed being involved in an assignment that required simulating an organization have indicated that they have received some manner of feedback. To be exact, 22% of respondents mentioned their OL capability being graded (included in summative assessment) and 18% indicated receiving verbal feedback (formative assessment) from the teachers. In Case 2, as many as 69.5% of students who claimed being involved in an assignment that required an organization to be formed remembered receiving some sort of feedback from the educator. Of those 13%

mentioned their OL capability being graded, 56.5% revealed receiving verbal comment on their OL capability.

What is more, the survey revealed a strong correlation between students receiving assessment of their OL capability and recognizing having developed their OL capability in formal learning in both cases. This raises an important question, "How is it that some students studying in similar study programs recognize being involved in an assignment that requires OL while others do not?" The data from the survey as well as the semi-structured interviews with the students revealed that students may have perceived group work as an assignment that required a simulated organization. Data from the interviews with the teachers has not revealed any educational environments that have been deliberately created for the purpose of developing students' OL capability. In conclusion, **the proposition P3 is rejected.**

P4 is formulated as "Possibilities of formal learning for developing students' OL capability are not used when formulating intended LO for internships". The analysis of this proposition should begin with the discussion whether students in both cases have the same possibilities as far as internships are concerned. Inquiry into the study programs revealed that all the programs investigated in both cases include internships. Furthermore, students studying in the study programs are not limited to traditional university internships and they also have a possibility to participate in the selection for either Demola internships (in Case 1) or SMART internships (in Case 2). Both Demola and SMART internships focus on developing innovations, therefore, they may be especially valuable. However, the courses for neither the traditional internships nor the innovative ones present developing students' OL capability as an intended learning outcome. Moreover, the analysis of the survey data has revealed that development of students' OL capability is not assessed in the internships in both cases. The triangulation of the data allows **confirming the proposition P4.**

The fifth proposition **(P5)** investigated in this dissertation is formulated as "**Some students have the possibility to develop their OL capability during internship in an organization that involves them into its activities (although it is not specified in the course description)**". Although the investigation into the previous propositions revealed that formal learning possibilities are not used when formulating the intended learning outcomes for internships, internships are still valuable as they place students in actual organizations. The analysis of the data from the students' survey revealed that the majority of respondents (74.2% in Case 1 and 76.2% in Case 2) reported that the internship organization involved them in its activities. Which means that students in both cases felt they belonged to the organization, but did they experience OL? To answer this question, the data from the survey was analysed to determine whether students in both cases have experienced all the stages of the SECI model. For this purpose, students were asked questions that relate to all stages of the SECI model: Socialization – Q27; Externalization – Q28; Combination – Q30 and Internalization – Q34. In Case 1, 61.6% of respondents claimed they experienced the Socialization phase (answered "yes" or "probably yes"). In Case 2, 82.8% of respondents confirmed experiencing the Socialization phase. As

many as 84.6% and 84.4% of respondents have claimed being engaged in the Externalization phase in Case 1 and 2, respectively.

The combination stage has been experienced by only 21.1% of respondents in Case 1 and 35.9% of respondents in Case 2. 21,9% and 29,7% of respondents reported experiencing the internalization phase in Cases 1 and 2, respectively. However, the results of the Mann-Whitney test did not reveal a statistically significant differences between students' responses to the questions that illustrate the stages of the knowledge creation process in the internship organizations (see Table 63 below for an example of such a test).

Table 63. Mann-Whitney U test results for respondents in both cases (Socialization)

	700 IT/MAN	N	Mean Rank	Sum of Ranks
Q27	IT	161	112.45	18104.50
	MAN	64	114.38	7320.50
	Total	225		

Mann-Whitney U	5063.500
Wilcoxon W	18104.500
Z	-.281
Asymp. Sig. (2-tailed)	.779

As indicated in the table above, p=0.779, whereas the significance level (α) is 0.05. The p values for Mann-Whitney U tests on question Q28, Q30, and Q34 were 0.901; 0.678, and 0.765, accordingly. Therefore, the acquired result is not significant.

Noteworthy is the fact that while the majority of students in both cases have indicated quite clearly experiencing Socialization and Externalization phases, relatively few have experienced Combination and Internalization. Such results, combined with the data from the semi-structured interviews, may suggest that due to a relatively short amount of time students spend in organizations, they are rarely involved in the decision-making process of the organization. Also, they may perceive internalizing the new knowledge (e.g. new procedures) not necessary as they are not going to stay in the organization after the internship. The fact that a slightly higher percentage of students in Case 2 experienced Combination and Internalization phases may be related to their study programs. In other words, students doing a course on management may have a higher chance of doing internships in managerial positions, which automatically involves decision-making on the scale of an organization.

In summary, **the proposition P5 "Some students have the possibility to develop their OL capability during an internship in an organization that involves them into its activities (although it is not specified in the course description"** is partially confirmed. Students do experience certain stages of knowledge creation; however, these are limited to a group level.

The proposition P6 is divided into two parts: **"Students participating in activities of student organizations have the possibilities for developing OL capability informally:**

P6-1. Factors of experiential learning for OL are at play in such organizations, similarly to work organizations.

P6-2. These factors impact the shaping of students personal OL learning environments".

Little quantitative evidence is available to either prove or disprove this proposition in the selected cases, only 10.2% of respondents in Case 1 and 15.5% of respondents in Case 2 have been involved in the activities of student organizations. The calls for interviews were answered by students who were involved in the activities of the student representation (three students in Case 1 and two students in Case 2).

The qualitative data obtained during the interviews revealed that students knew, understood, and actively pursued (especially in the first years) goals of the student representation. The informants have also experienced most of the stages of the SECI model, especially Socialization, Externalization, and Internalization, to a lesser extent Combination. Moreover, from the students' interviews it was discovered that student representations at the university are managed efficiently. Students have revealed learning a lot from their more experienced colleagues. The staff is assigned to work in pairs or teams that include a more experienced member who teaches new recruits. However, students' involvement in student organizations did not induce increased interest in the topic of OL. No correlation between student involvement in the activities of student organizations and developing the OL capability in informal learning has been observed. Therefore, the first part of the proposition P6 **"Students participating in activities of student organizations, have the possibilities for developing OL capability informally: P6-1**: **Factors of experiential learning for OL are at play in such organizations"** is confirmed. The second part of the proposition P6: **"These factors impact the shaping of students personal OL learning environments**" is problematic. Although these factors impact the shaping of students personal OL learning environments, the proposition could be rejected considering the correlation between student involvement in the activities of student organizations and developing the OL capability in informal learning was not detected. However, the statement contradicts the findings that students recognise the activities that Nonaka and Takeuchi (1995) describe as organizational learning stages. Therefore, more discussion is required and that is provided in the next section of the dissertation.

The proposition P7 is also divided into two parts: **Students, employed in work organizations and participating in the organizational activities, have the possibilities for developing the OL informally**:

P7-1. Factors of experiential learning for OL are at play in such organizations.

P7-2. These factors impact the shaping of students personal OL learning environments.

More than half of the respondents in both cases (56.2% in Case 1 and 65.5% in Case 2) have been employed for at least six months at the time they filled out the questionnaire. The survey revealed that the majority of respondents in both cases understood and contributed to pursuing the organization's goals. The data also

indicated that students had a chance to experience all stages of the SECI model. Unlike the involvement in student internships or student organizations, involvement in work organizations enabled students to experience the Combination phase. This is further confirmed by the data obtained from the semi-structured interviews with students in both cases. There seems to be no statistically significant difference in the number of students who experienced the stages of the SECI model between the cases. Mann-Whitney U test did not reveal any statistically significant differences as p=0.293; 0.158; 0.481, and 0.979 for questions Q55 (Socialization), Q56 (Externalization), Q58 (Combination), and Q62 (Internalization), respectively, whereas the significance level (α) is 0.05 (see Appendix B for more details).

The analysis of the data from the semi-structured interviews has confirmed that students in both cases have experienced all stages of OL as described in the SECI model. They were not introduced to any knowledge management models in their company, OL occurred spontaneously while they were working in their departments. However, students did not reflect on their OL experience, hence it remained tacit. Students explained they did not reflect on these activities until OL was brought up in the questionnaire of the research. To summarize, the first part of the proposition P7 "**Students employed in work organizations and participating in the organizational activities have the possibilities for developing the OL informally: P7-1. Factors of experiential learning for OL are at play in such organizations"** is proved. Similarly to the proposition **P6-2** above, the proposition **P7-2 "These factors impact the shaping of students' personal OL learning environments"** could be rejected on the basis of the lack of correlation between the student involvement in the activities of student organizations and developing the OL capability in informal learning. However, such a statement would contradict the findings that students recognise being involved in the activities perceived by Nonaka and Takeuchi (1995) as organizational learning stages. Therefore, more discussion is required and that is provided in the next section of the dissertation.

Propositions P8 "Students that shape their personal learning environments for the development of the OL capability influenced by the factors of formal learning, develop their OL capability by employing the possibilities of non-formal and informal learning" and **P9** "**Students who are not affected by the factors of formal learning influencing the development of the OL capability do not use the non-formal and informal possibilities to develop their OL capability**" are investigated in this section. These propositions shall be investigated by triangulating data from the student survey as well as semi-structured interviews contextualising within the results of the content analysis of the study programs. First, an observation needs to be made regarding the percentage of students who perceive having developed their OL capability through formal and informal learning in both cases. The number of students who indicated having developed their OL capability through formal learning in Case 1 is 17.5%, whereas in Case 2 it is 32.2%. Whereas the number of students who indicated having developed their OL capability through informal (or non-formal) learning in Case 1 is 23.9% and in Case 2 it is 40.5%. Mann-

Whitney U test has been conducted to determine whether this difference is statistically significant. The results of the test are presented in Table 64 below.

Table 64. Results of Mann-Whitney U test for questions Q65 and Q66

	IT/MAN	N	Mean Rank	Sum of Ranks
Q65	IT	217	144.79	31420.00
	MAN	84	167.04	14031.00
	Total	301		
Q66	IT	217	144.92	31448.00
	MAN	84	166.70	14003.00
	Total	301		

	Q65	Q66
Mann-Whitney U	7767.000	7795.000
Wilcoxon W	31420.000	31448.000
Z	-2.407	-2.337
Asymp. Sig. (2-tailed)	.016	.019

The Mann-Whitney test revealed a statistically significant difference between two cases: p=0,016 for question Q65 (Can you claim you have developed the OL capability in university courses (formal learning)?) and p=0,019 for question Q66 (Can you claim you have developed the OL capability through informal (non-formal) learning?) with α=0,05. This means that the surveyed students have recognized developing the OL capability through both formal and informal learning in Case 2 more often than in Case 1. Research conducted on other variables did not reveal any significant differences between the cases, thus it can be assumed that it is the nature of management programs and the course units involved in these programs that make the difference. What is more, the correlation analysis on questions Q65 and Q66 revealed a strong correlation between the variables in both cases. It means that developing the OL capability in formal learning has a significant impact on developing OL capability in informal (or non-formal) learning. Thus, **the proposition P8** "**Students that shape their personal learning environments for the development of the OL capability influenced by the factors of formal learning, develop their OL capability by employing the possibilities of non-formal and informal learning**" is confirmed**.**

As indicated in previous sections, students lacked the assessment of their OL efforts in formal learning (in both coursework and internships). However, students have also revealed not reflecting on their activities related to OL in organizations (work or student organizations). As many as 61.8% of respondents in Case 1 and 60.7% of respondents in Case 2 revealed that they have only reflected on OL while they were completing the questionnaires in the survey. The assumption can be made that if students were made aware of what OL is in their university studies, they may have sought additional information or at least reflected on their OL experience in the organizations they were involved with. In the interviews, students pointed out to the fact that it is difficult to try to learn something (and reflect on something) when you do not know at least the name of the phenomenon. Thus, **the proposition P9**

"Students who are not affected by the factors of formal learning influencing the development of the OL capability do not use the non-formal and informal possibilities to develop their OL capability" is confirmed.

The question why students in IT and Management programs, all of which are aimed at educating students for mostly knowledge-based organizations, perceive the possibility to develop the OL capability through both formal and informal learning differently requires further discussions. This and other questions prompted by the empirical research shall be discussed in the next section.

Summary of the empirical research results

The empirical research revealed that:

- The university curriculum (formal education) only partially focuses on the development of the OL capability; the emphasis is made on the group level rather than organization level (several groups working together). Students tend to think of the organization in terms of a group rather than a unit consisting of several groups working together, which points to the gap in their knowledge of modern management, particularly of knowledge-based organizations. This knowledge gap impedes students' OL.
- Factors influencing the development of students' OL capability manifested in the university's educational environments (formal learning) do not entirely match the factors that come into play in knowledge-based organizations. This implies that the courses students have at the university need a special didactic system that would allow simulating an actual organization. Unfortunately, the purposefully designed didactic system in the study process is not implemented. Although, the research results pointed to numerous benefits, such a system may bring for the development of students' OL capability. Students in both investigated cases were involved in groupwork in one way or another. Teacher's feedback on students' learning for OL (even if on a group level) promotes the development of the OL capability on this limited level. This once again points to the necessity of a purposefully designed didactic system for the development of students' OL capability.
- The implementation of the dedicated didactic system (such as EDENSOL or similar) would give students both the necessary knowledge of knowledge-based organizations and knowledge creation as well as create the conditions to exercise OL in the study program. To make the formal curriculum more suitable for the development of the OL capability, the implementation of the agile approach to the curriculum is necessary. This approach relies on PBL and is compatible with didactic systems such as EDENSOL and similar.
- Those students who felt they were involved in the organization's activities during their internship recognized developing the OL (though limited to a group level) capability through formal learning. This indicates that developing the OL capability in the university courses directly impacts the development of students' OL capability during internships. The evidence also suggests that efforts invested in the internships on students' behalf brought their experience during the internships as close to the authentic organizational experience as possible. However, some of the students felt

partially disheartened by the attitude of other members of the organization towards interns. Furthermore, a lack of collaboration between the university and the internship organizations does not allow students to fully take advantage of the internship to develop their OL capability. It has been found that possibilities of formal learning for developing students' OL capability are not used when formulating ILOs for internships. It has also been found that some students have the possibility to develop their OL capability during an internship in an organization that involves them into its activities (although it is not specified in the course description); this is particularly true for the development of students' OL capability on the group level.

- While it has been proved that students participating in activities of student organizations have the possibilities for developing the OL capability informally through experiential learning, such involvement with student organizations is not a significant factor due to several reasons: (a) few students get involved with these organizations; (b) students do not relate their involvement with student organizations to developing the OL capability through non-formal and informal learning. Noteworthy is the fact that during the interviews, students were able to identify experiencing all the stages of the SECI knowledge creation process while actively participating in the activities at the student representation. At the same time, no correlation between such involvement and developing the OL capability in informal learning has been discovered.
- Students employed in work organizations and participating in the organization's activities have the possibilities for developing the OL informally through experiential learning. The analysis of the survey results and the data from semi-structured interviews revealed that work organizations may serve as a potential learning environment which has the most influence on the development of students' OL capability. None of the interviewed students mentioned being formally introduced to a knowledge management system in their work organizations, nonetheless, all of them recognized experiencing all the stages of the SECI model. Which implies that the OL capability students develop remains tacit and needs to be made explicit through reflection to encourage students to seek means to further enhance this capability.
- Students that shape their personal learning environments for the development of the OL capability influenced by the factors of formal learning, develop their OL capability by employing the possibilities of non-formal and informal learning. The correlational analysis revealed a strong correlation between developing the OL capability through formal, informal, and non-formal learning. Students who have experienced factors influencing students' OL capability in formal learning in both cases transform it into their personal learning environments for developing the OL capability and incorporate elements of other potential learning environments with greater facility. However, students who are not affected by the factors of formal learning influencing the development of the OL capability do not use the non-formal and informal possibilities to develop their OL capability.
- Teachers do not assess students' OL capability. The fact that OL is not included as an ILO in either study program makes its summative assessment complicate. However, it has been observed that students have not received formative

assessment either. Teacher's feedback would be highly beneficial in courses and internships alike, as it would encourage students to reflect and map further learning possibilities.

- Students generally lack awareness of the possibilities to validate and to present for formal recognition high-level OL knowledge they acquire through informal and non-formal learning. The students educated in the investigated study programs in Case 1 and Case 2 are likely to work in knowledge-based organizations (some of them had already worked in knowledge-based organizations during their studies). Such organizations rely on knowledge creation, transfer, dissemination, and retention. Therefore, students are likely to practice OL regularly. The investigation conducted in this dissertation did not seek to answer whether their work on the organizational knowledge creation was effective. If students were made aware of the benefits APEL system, they might be motivated to collect evidence of their OL capability, validate it, and subsequently accredit it.

3.3. Discussion of the results

The aim of this discussion is to discuss the most relevant findings from the empirical research and to check how these findings influence the manifestation of the factors influencing the development of students' OL capability in formal, non-formal, and informal learning substantiated in the first part of the dissertation (see Table 3).

Formal learning for OL

Although authors investigating the issues of organizational learning and knowledge management (Argote & Miron-Spektor, 2011; North & Kumta, 2018; Kastaneda et al. 2018; Namada, 2018; etc.) stress the importance of OL for contemporary organizations, universities educating future employees for these organizations do not pay sufficient attention to OL in the formal curriculum. This can be said of both the top European universities (Jucevičienė & Leščinskij, 2017) as well as of the selected study programs of Lithuanian university investigated in Case 1 and Case 2 in this dissertation. Although the Bologna Process in Europe and the introduction of the European Qualification Framework stresses the importance of measuring the learning outcomes in higher education (Caspersen et al., 2017), the learning outcomes described in the selected study programs only implied OL (**F2** had little impact on students). OL is not directly communicated as a learning outcome in either the pilot study of European universities or the main research at Lithuanian university (neither in courses nor in internships). However, the study of both Lithuanian cases suggested certain learning outcomes that imply OL, consider: "[students] will be able to work in a team, clearly communicate their arguments and ideas, put forward and discuss ideas". CG2 ILO reads: "Will be able to assume group responsibility and share group vision, work with co-workers with different backgrounds, present ideas and results and maintain business communication." Study programs investigated in Case 2 have also included intended learning outcomes (ILO) that implied OL, consider: "Be able to implement modern business management solutions, be able to work as a team". Interestingly, students still recognized OL in some of the courses, and the interviews with both teachers and students confirmed

that OL does occur in the study process to some extent (mostly on a group level). If this is the case, this calls for a revision of the ILOs and perhaps even inclusion of OL as one of the aims of the investigated study programs. Such measures, among other positive effects, are likely to make these study programs more attractive to students who intend to seek careers in contemporary knowledge-based organizations. This link between employability and ILOs needs to be clearly communicated to students, as it improves their engagement (Jorre & Oliver, 2018).

Since OL is not included into the courses as an ILO, it makes it difficult to formally assess it (Suskie, 2018). Hence, the majority of students noticed that no formal assessment of their OL efforts was suggested by the teachers. The author of the dissertation agrees that summative assessment of students' OL capability is problematic, however, this opens the window of opportunity for formative assessment (Lau, 2016; Buchholtz et al., 2018; Ellis, 2013). Unfortunately, students in the investigated cases did not remember receiving any formative feedback on OL from teachers either.

The influence of the assessment of students' OL during courses was also one of the factors investigated in this dissertation (**F6**). The survey data as well as interviews with the students in both cases revealed that students seldom received feedback on their OL capability. During the interviews, students and teachers in both programs agreed that groupwork was sometimes included into assessment, whereas OL was never really assessed. The lack of feedback meant students did not reflect on the OL processes in formal learning (**F7**). Their experience (if any) remained tacit.

The strong manifestation of the factor **F1** would probably mean the most direct route to successfully developing students' OL capability in formal curriculum as efficiency of such approaches has been proved empirically (Chen & Yang, 2019). However, this factor was not observed in the investigated cases. The lack of such didactic approaches leads to the insufficient manifestation of the factor **F3**. There are several reasons that make inclusion of the didactic models that facilitates OL on an organizational level into the curriculum problematic. First, as noted by Jucevičienė and Valinevičienė (2014), this requires additional efforts (and time investments) on the educator's behalf, as chain of educational environments need to be developed, these include: *educational environments for students' organizational learning introductory empowerment* and *educational environments for students' organizational learning empowerment.* It may be difficult to accomplish without redesigning the syllabus of the course. Yet another problem is that even if appropriate environments that facilitate the development of students' OL capability are ensured, this does not guarantee the effect. The students must be able to collaborate effectively, comprehend, and pursue organizational goals. Effective collaboration among students is generally problematic on all levels of the education system: primary (Barron, 2003; Le et al., 2018), secondary (Ross, 2008; Leeuwen & Janssen, 2019), and tertiary (Popov et al., 2012; Jucevičienė & Vizgirdaitė, 2012; Gomez-Lanier, 2018; Jaleniauskienė et al., 2019).

The problem of student collaboration in higher education has become especially relevant as the universities not only became entrepreneurial but also implement the

concept of the corporate university (Tuchman, 2009), which generally, promotes student competition and in turn impedes effective collaboration. Although students mostly claim they worked in a spirit of teamwork, during the interviews they also mentioned difficulties such as the lack of engagement or cooperative (rather than collaborative) approach to teamwork. Students also find it difficult to experience what Senge (2014) referred to as perspective-taking. In other words, in the classroom environment students fail to prioritize the goals of the organization over their personal goals. This is consistent with the findings in Jucevičienė (2015), Jucevičienė and Valinevičienė (2014) and points out to the necessity of introducing a dedicated didactic model for the development of students' OL capability.

Since OL is about creating knowledge, developing and disseminating innovations, activities are likely to revolve around solving problems relevant to the organizations. This is a complex assignment that requires intricate educator-learner interactions. Thomas (2000) highlighted the complexity of teacher-student activities in problem-solving assignments and arrived at a conclusion that such interactions require a specific model: "Applying the right methods is not enough to master such activities, because a model is needed: Project-based learning (PBL) is a model that organizes learning around projects" (Thomas 2000, p. 1). The author of this dissertation agrees with this statement and suggests EDENSOL (Jucevičienė & Valinevičienė, 2015) as a model suitable for developing students' OL capability. Models such as EDENSOL are useful as they facilitate formative assessment of the OL capability developed by students. In this respect, the EDENSOL model is more comprehensive as it incorporates all four stages of knowledge creation in organizations, whereas the approach to PBL at Aalborg University emphasises the first two stages of the SECI model, i.e. it does not focus on the collective learning on the level of the organization as an entity.

The knowledge gap in students understanding of organizations (of knowledge-based organizations in particular) has been observed (**F4**). *The analysis of the data from the interviews revealed that students failed to see the difference between a group or team and organization* (p. 113 in Case 1 and p. 151 in Case 2). One may ask, "How could such an identification affect students' future work in the organization, when the professional perceives his/her unit/group as an organization but is indifferent to the goals of the entire organization? What students learn at the university could have a noticeable effect on their further performance as professionals. This may lead to the problem of unjustified competition between departments/groups rather than collaboration in the pursuit of the organization's as entity goals. Such pursuit of the common goal is an important factor of OL and is referred to by Senge (2014) as perspective-taking. Such and similar problems are reported in research literature (Jucevičienė & Vizgirdaitė, 2012). However, it should be noted that students perceived this involvement in tasks requiring groupwork differently (see Table 16), despite the fact that the analysis of study program aims and the data from teacher interviews revealed that teachers purposefully created educational environments for groupwork (p. 113, p. 147). Thus, the factor **F5** has been experienced by students differently. Students exposed to identical educational environments form different

personal learning environments. It is the latter, rather than the educational environments created by an educator, that have a direct impact on student learning. This confirms the statement suggested by the theory of educational and learning environments (Jucevičienė, 2013) about the selective nature of the formation of personal learning environments from the same educational environment. The difficulties in turning OL in the study process into a truly organizational phenomenon has been observed by other researchers (Jucevičienė & Valinevičienė, 2014; Valinevičienė, 2017). In terms of organizational knowledge creation, the process usually becomes more difficult at the combination phase. Therefore, it is complicated for the educators to create and implement the systemizing "ba" (Nonaka et al., 2000). Hence, the discussion above suggests a need for an appropriate didactic system for developing students' OL capability is required.

From formal to non-formal and informal learning for OL: student internships

On one hand, the limitations discussed above make it difficult to enable students to practice and develop the OL capability on the level of the organization in the study process. On the other hand, it may be possible to do so in the authentic organizational setting during student internships. Hurst and Good (2010) noticed that internships are valuable to the student, employer, and university. They serve as a knowledge transfer tool both for students and organizations (Piterou & Birch, 2016).

All four study programs investigated in Case 1 and Case 2 included internships. Students were given a choice of either doing their internships in the industry or opting for less traditional internships, such as Demola Internship in Case 1 or Smart Internship in Case 2. Both have their advantages and limitations. Katula and Threnhauser (1999) stated that the purpose of the internship was twofold: to provide students with understanding organizational structures and protocol within a professional working environment and with an opportunity for professional development, while Zehr and Korte (2020) stress the importance of internships for understanding the principles of organization's work. While, arguably, in both cases internships seem to have satisfied all of the aims, the less traditional Demola internship and Smart internship seem to have had a greater effect on the students when it came to the development of the OL capability. Many of students in both IT and Management programs were involved, to some extent, in creating organizational knowledge during the internships, i.e. they exercised OL, but mostly in the stages of Socialization and Externalization (SECI model as it is described by Nonaka & Takeuchi, 1995). Thus, students' OL experience was limited to the group level, which points to the fact that internships were not designed with the OL capability in mind (**F8**). However, approximately one-fifth of the respondents practiced OL at the organization-wide level (indicated participating in combination and internalization phases).

Since a strong link was found between the participation in combination and internalization phases, it can be argued that those interns who participated in the development of organizational knowledge at the organization level also applied it while working in that organization, embodying the knowledge in their activities to the

extent, where this knowledge became tacit. Given that the internship lasted for two months only, the ability of the organization to create particular "ba" (Nonaka et al., 2000) as potential learning environments and the ability of some students to incorporate these environments into their personal learning environments for OL needs to be recognized. However, the fact that only about one fifth of students practiced OL at the level of the whole organization, and the fact that data from the interviews indicates a lack of opportunities to participate in the activities of the organization as a whole (not only in its own department or group), suggests that students did not have all the necessary conditions.

In this respect, it is also necessary to consider the fact that the university did not formulate the learning aims and outcomes related to OL for student internships (**F9**). Hergert (2011) stressed the relevance of teaching instructions to maximize the effects of internships. The effect of internships could be significantly enhanced if educators provided an appropriate structure and integrated internship experience with student academic background (Hergert, 2011). This also means that students are less likely to deliberately try to put any knowledge of OL they have into practice during the internship (**F12**).

Since OL was not one of the ILOs formulated for the internships, it was not assessed by the teachers, i.e. students received no feedback on their learning for the development of the OL capability (**F13**). While the summative assessment of the OL capability in internships may be problematic, timely and relevant feedback may help students shape their personal learning environments in such a way that will help them develop their OL capability. Educational researchers emphasize the importance of feedback for student learning (McKenzie, 2017; Buchholtz et al., 2018). The fact that students recalled their OL activities in the internalization phase only when they were asked about it during the interviews (but not in the survey) allows assuming that the changes in students' OL capability remain for them mostly tacit. The assessment is also important from the point of view of student reflections as both grades (summative assessment) or teacher's feedback (formative assessment) induces students' reflection. The analysis of the data from students' interviews revealed that students did not reflect on their OL learning experience in the internships (**F14**). While the author of the dissertation agrees that the capability assessment is complicated due to its intangible nature (Stephenson, 2007), it is also rewarding and is likely to lead to reflection and motivate students to develop their OL capability further, and perhaps even validate it (Valk, 2009) and accredit through APEL system (Merrill & Hill, 2003; Kaprawi et al., 2015; Bohlinger et al., 2016).

Neither interviews with teachers nor the analysis of the internship descriptions revealed collaboration between the university and the internship organizations in terms of creating such environments that would facilitate the development of students' OL capability (**F10**). To make internships more valuable in terms of developing students' OL capability, the educators need to collaborate with the internship organizations and create such educational environments or facilitate the development of potential learning environments where students would be involved in all the stages of organizational knowledge creation. This, in the first place, calls for revision of the

intended learning outcomes for the internships and inclusion of knowledge management or OL as an intended learning outcome. Such collaboration between the universities and organizations is of high importance is particularly emphasized by researchers (Hergert, 2009; Hurst & Good, 2010; Hynie et al., 2011; Tran, 2016) when looking for ways to improve internships.

It is also necessary to consider the specifics of student internships in both cases, as students had a chance to get involved in innovative internships (in Case 1 it is Demola internship and in Case 2 it is Smart internship) that can also take place in a form of groupwork in a virtual space. Such internships have been investigated and considered valuable for the diversity (Jeske, 2019; Kraft et al., 2019) they offer as well as availability to learners (Theelen et al., 2020; Pillutla et al., 2019). However, when working in a virtual space in other than managerial positions, it may be difficult to grasp the realities of the entire organization. Such internships are then limited to group activities. Therefore, it is reasonable to expect the development of students' OL capability in the first two stages (Socialization and Externalization) rather than in all 4 stages of organizational knowledge creation.

Students do not spend as much time at companies as during Internship in the industry course, however, they are introduced to the structure of the company and they are aware of the qualities of the organizations that gave them the task. What these internships excel at is the creation of new knowledge relevant for the organization. All solutions developed during the internship are innovative and have not been used before. Moreover, students get to work in multidisciplinary teams that promote radical collaboration. Teambuilding is taken very seriously, thus, teams that work on their projects are closely knit, which is important for the development of knowledge assets (for example, trust) that are important for creation of new knowledge (Nonaka et al., 2000). The interviewed students have also mentioned how collaboration during the internships was much better that during team projects in university courses. The approach adopted in these internships may be a solution to the insufficient collaboration problems pointed out by Jucevičienė and Vizgirdaitė (2012). These innovative internships have also employed pedagogical designs (methods) that can be particularly useful for developing OL capabilities such as PBL, design thinking, Lego serious play, and other. The curricula of Demola internship and Smart internship seem to adopt the *Agile* approach (Stewart et al., 2009) which stresses the development of innovations through building real working solutions for the real-world problems.

Hergert (2011) maintained that internships played a critical part in allowing students to connect traditional classroom activities and the workplace. While Internship in the industry is doubtlessly useful for the authentic experience of being a member of a real organization for a period (in our cases) of eight weeks, it also has some drawbacks. For instance, during the interviews some students have noticed that although the internship in the industry resembled a real job, realizing that they were interns made them feel less than full members of the organization. Which makes it difficult to expect students to get involved in the problem-solving activities on the level of organization as a whole (**F11**). The same attitude to students was observed in other members of the organization who were full-time employees. In this respect,

long-term placements for internships seem to be a better solution (see U9 on the list of top business and management schools in the Pilot study). These so-called "sandwich courses" serve an excellent example of long-term placements and its significance to the curriculum; such placements are successfully implemented at universities in England. The characteristic feature of such programs was that they included a substantial work placement that often lasted as long as a year (Mason et al., 2003). Wilton (2012) maintained that such placements were considered to be a significant asset for the graduates entering the labour market, i.e., compared to their peers having no placements, sandwich students were advantaged in most study areas, including business, management, and finance in the labour market. However, no such possibilities are available in the investigated cases.

Generally, the formal curriculum does little to include the development of the OL capability in student internships. However, it has been found that students developed their OL capability informally through involvement in organization's activities.

Non-formal and informal learning for OL

Student internships

It should also be noted that the internship organizations did not introduce students to their knowledge management systems (presence of such systems is especially likely in IT-based organizations), so the factor of non-formal learning did not influence the development of students' OL capability in their internships either. However, students did develop their OL capability through experiential learning, i.e. active involvement into organization's activities and learning from their peers (**F17 b**).

Possibilities for students to develop the OL capability through non-formal and informal learning have also been investigated. As discussed in the previous section, formal university learning does not fully create the possibilities for students to develop their OL capability. Some of the evidence suggests that university courses are relatively successful when it comes to developing students' OL capabilities on the group level but not on the level of the organization. Exception being the university internship, which in some cases may take OL as far as the organization level. However, students develop the OL capability in the internships not because it is "prescribed" by the formal curriculum, but rather informally through experiential learning.

OL at work organizations

IT and Management students were acquainted with their work organization's (where they were employed as regular employees) goals and were aware of what is expected of them and how they have to contribute to achieving this goal (**F16**). As employees in work organizations, most students in both cases practiced all four stages of SECI (**F17 c; F18**). Unlike in the internships, more students reported practicing not only socialization and externalization but also combination and internalization stages. The research data showed that such exercising of OL and the development of the OL

capability is a "two ways" product: it incorporates the efforts of both the organization acting as a knowledge-based organization and the efforts of the employee him/herself. The findings of authors investigating learning organizations (Nieves et al., 2016; Marshall, 2018; Lee, 2018) confirm that employee learning through creation of organizational knowledge is the result of the efforts on behalf of both, the organization and the employee. However, the question remains as to the OL efficacy of the student as an employee. While the fact that students practice OL in work and student organizations environments is admirable, it is still unclear whether it correlates with the OL efficacy of student as an organizational knowledge creator. The question remains how successfully the OL capability is developed by informal learning. This question requires further investigation.

OL at student organizations

In both investigated cases, students had a chance to get involved with various student organizations (**F15**). Although of the voluntary nature, student organizations have a lot of similarities with work organization. In both student and work organizations students must undergo a selection process to be accepted into them. In both organizations, students have a probationary period, during which they are involved in routine everyday activities of the organization. Both work and student organizations have a clear structure, hierarchy, and roles assigned to their members. The differences include a different motivation system: student organizations do not offer monetary remuneration to its members, there is limited service period meaning that students can be involved in activities of student organizations only while studying at the university. Students involved in activities of student organizations work only several hours a week. Despite the differences, student and work organizations have a lot of similarities. This may be the reason why students in Case 1 and Case 2 have identified all the phases of knowledge creation as explained by Nonaka's (1994) SECI model (**F17 a; F18**).

Although work and student organizations have a number of similarities, it is unwise to expect student organizations to be able to create the same conditions for OL that work organizations do. However, data from interviews with students involved in activities of student representations suggests that students still took up OL activities. It seems, that the perception of the meaningfulness of the work (Cañal-Bruland & van der Kamp, 2015) plays a particularly important role. The fact that members of the organization themselves are able to participate in the OL process may have to do with the friendly relationship fostered with their peers and managers in the organization. This was particularly visible in students' comments on the socialization phase.

As the result of these relationships, May, Korczynski and Frenkel (2002) pointed to the commitment of knowledge work (KW), their satisfaction, and work effort. It can be assumed that KM activities, including OL, in this case, are "bottom-up", thus knowledge self-management, driven by the employees themselves, is realized. In this sense, the ideas of Kelloway and Barling (2000), which emphasized the "discretionary behaviour focused on the use of knowledge" (p. 291), are confirmed. The authors suggested that such employees should not be considered as

employees but as investors (Kelloway & Barling, 2000) . The problem is that only limited number of the investigated students have their activity in the student organizations. This is understandable, as a rule, students are short on money, so they choose to study and work simultaneously. As the research results show, a big number of students is employed at work organizations as full-time or part-time employees. Therefore, while the factor of student organizations has a big potential for developing students' OL capability, affects a small number of students.

While students most certainly have the possibility to exercise OL in various student and/or work organizations, the lack of formal learning means that this experience remains fragmented and mostly tacit. During the interviews, students recognized OL as a part of their activities either in work or student organizations but admitted they did not previously reflect on it (**F19**). Less than a half of respondents have indicated seeking ways to further development their OL capability (**F20**).

Integration of formal, non-formal, informal learning for OL

The correlation between developing students' capability in formal and non-formal or informal learning has been observed in both cases. The investigation on whether formal learning influences learners' willingness to seek additional possibilities to develop knowledge or skills (or capability) through informal learning have been reported by Bednall and Sanders (2017). The researchers suggested that formal learning drives learners to seek additional means of developing their knowledge/skills or capability through informal and non-formal learning (Bednall & Sanders, 2017). Similar findings were obtained from the empirical research in this dissertation. The cross-investigation of the findings from both cases revealed a statistically significant difference between the percentage of students who have recognized developing their OL capability through both formal and informal learning in Case 1 and Case 2 (students in Management study programs had more possibilities to develop the OL capability than those in IT study programs). Considering the fact that the analysis of data from the students' survey revealed a positive correlation between developing the OL capability through formal and informal learning, it is possible that students in the study programs investigated in Case 2 had more possibilities to learn or experience OL from the educational environments created by the teacher.

The analysis of data from the semi-structured interview with the teacher teaching two courses that imply OL in Case 2 (p. 147) revealed that students had possibilities (even if somewhat limited) to both learn OL theory and practice OL. Although students did not confirm this in their interviews, it is possible that they have incorporated it into their personal learning environments on the level of tacit knowledge.

What is more, although students were influenced by similar educational environments, in both cases, but especially in Management programs, they evaluated the development of their OL capability differently. The theory of educational and learning environments explains that the same educational environment may be incorporated differently by different students; each of them may transform differently

the educational environment into his/her personal learning environment (Jucevičienė, 2010). Naturally, it is not always a conscious effort on the students' behalf. On the contrary, this transformation into a personal learning environment as a rule occurs spontaneously, without a deliberate effort on the learner's behalf. Thus, the created personal learning environments are not purposefully fixed from educational environments by the learners, although these environments directly impact the learner.

This is especially evident in the case of learning by doing. Dewey (1986) has emphasized that learning outcomes can be achieved simply by acting unconsciously. For the learner to perceive these outcomes they need to be fixed (in other words, tacit knowledge needs to be transformed into explicit). This requires reflection (Dewey, 1986; Bell, 2010; DuFour & DuFour, 2013). Such reflection, according to Dewey (1986) is usually induced by a teacher or another educator by organizing feedback. The current dissertation revealed that students received no such feedback (which may have induced reflection) when they were involved in OL activities during internships as well as throughout their involvement in student or work organizations. Therefore, it may be assumed that factors of **non-formal and informal learning influence the development of students' OL capability. This development, however, remains tacit; for it to be perceived and noticed by the learner, explicit influence of factors of the development of the OL capability in formal learning is required.**

Developing students' OL capability is an ambitious goal that needs to be implemented systematically. To ensure such goals, the university curriculum needs to be designed as an agile curriculum (Nicolettou & Soulis, 2014; Willeke, 2011; Parsons & McCallum, 2019; Salza et al., 2019). Such a curriculum is characterised by its PBL-oriented approach and focus on creating working solutions for real-life problems, readiness to promote students' non-formal and informal learning initiatives, provided they match the aims and learning outcomes set for the study program or expand them through innovative approaches (Kek & Huijser, 2017). The problems in agile-oriented approach are usually received from the real organizations and can be solved in cooperation with these organizations (as is the case with Demola internship). However, the question to what extent can agile approach be applied to various disciplines at the university requires more research.

The implementation of the agile curriculum makes the introduction and development of Accreditation of Prior Experiential Learning (APEL) system even more meaningful, as students solving real problems for organizations may actually develop myriad of skills and capabilities. These can be linked with the formal curriculum through assessment and validation of prior learning, as suggested by Colardyn and Bjørnåvold (2004). APEL gives value to the learning, skills, and competencies people have gained through either formal or informal learning. In other words, APEL makes learning visible (Bjørnåvold, 2000). This means that the OL experience, which was argued to be tacit will now be made explicit, makes the learning experience and the result of this experience (developed or enhanced the OL capability) even more valuable (Kaprawi et al., 2015). APEL system may help students who have shaped tacit personal learning environments for OL transform them into explicit personal learning environments through reflection and validation. In

other words, it could be the linking element between the knowledge and skills students acquire through formal learning and the knowledge or skills they practice or acquire through informal learning (Kaprawi et al., 2018) for developing students' OL capability. The author of the dissertation sees APEL as an instrumental factor (**F21**) for bridging formal, non-formal, and informal learning for the development of students' OL capability. Unfortunately, the research shows that users are unaware of the APEL system being implemented at the X University and are unlikely to use its possibilities.

Limitations of the study

The current study aims to investigate a very complex phenomenon. A great number of study programs delivered at the university makes the investigation of factors influencing the development of student's OL capability in formal learning extremely complicated. Not to mention that these factors may be manifested differently in different modes of studies. Furthermore, it is not clear whether participation in other student organizations, such as sports or art clubs, influences the development of student's OL capability. The survey revealed very few students who participated in such organizations, but they did not answer the call to arrive for the interview**.**

CONCLUSIONS

1. The following constructs have been theoretically substantiated:

1.1 The definition for the organizational learning capability as a human phenomenon has been substantiated: ***organizational learning capability as a human phenomenon*** refers to *the individual's readiness to create organizational knowledge necessary for achieving the organization's goals on the individual, group, and organization's (as a system) levels*. This readiness is expressed through not only the will to act, but also through the awareness of the organization's goals as well as awareness of the means to achieve these goals, knowledge of organizational learning, and the ability to implement OL in practice.

1.2 The factors influencing the development of students' OL capability in formal, non-formal, and informal learning:

- ***Factors of formal learning in the university's educational environment:***

• The aims and the learning outcomes of the study program or its modules provide the development of students' OL capability;

• The sequence of educational environments, created through special didactic systems (that simulate organizations), is implemented in the study program;

• Students understand the simulated organization's goal and pursue it by contributing to the organizational knowledge pool, because they know it is important for practicing OL;

• Students have at least some initial knowledge of knowledge-based organizations and how these organizations function;

• The educational environments existing within the selected didactic model are implemented in a way that enables the emergence of environments ("ba") which simulate the knowledge creation modes described in the SECI model;

• Students' learning the development of the OL capability by application of a special didactic model is assessed;

• Students' reflection on formal learning for OL is encouraged.

- ***Formal learning in the internship organization's environments:***

• Student internships are designed to facilitate the development of students' OL capability;

• One of the learning outcomes of the internship module foresees the development of student's OL capability/competence;

• Students are involved in internships in organizations that recognize the importance of organizational learning and in collaboration with the university create environments ("ba") that involve students in knowledge creation processes (SECI phases);

• Students are deliberately involved in the collective problem-solving process at the internship organization to experience OL on the level of the organization;

• Students understand the internship organization's goal and pursue it by contributing to the organizational knowledge pool, because they know it is important for practicing OL;

• Students' learning for the development of the OL capability during the internships is assessed;

• Reflection on students' activities in the internship is encouraged.

- ***Non-formal and informal learning in the potential learning environments:***

• Students can get actively involved in the activities of the clubs or other organizations at the university or work organizations;

• Students understand the organization's goal and actively pursue it;

• There is a relationship between activities in the organization and organizational learning*;*

• Environments ("ba") are created which enable knowledge creation through the SECI modes;

• Students reflect on OL;

• Students seek to further develop their OL capability as self-directed learners;

• Students' learning for the development of the OL capability is accredited.

1.3. The study process based on the concept of the *agile curriculum* enables students to take advantage of the Accreditation of Prior Learning system at the university, ensures the integration of formal, non-formal and informal learning for the development of the OL capability.

2. The applied case study methodology is appropriate to examine how the substantiated factors are manifested in the context of formal, non-formal, and informal learning and how they influence the development of students' OL capability. The triangulation of the data allows a deeper understanding of the relationships between teaching and learning. This is especially relevant considering that in formal learning for the development of the OL capability, learners transform educational environments created by the educator into their personal learning environments differently. The cross-case analysis of findings is applied to obtain a higher abstraction level of results. Data for the research was acquired from three sources (document analysis, data from students' survey, and semi-structured interviews). Multiple sources of evidence ensured the possibility to triangulate data.

3. The empirical research has revealed factors for the development of students' OL capability and the peculiarities of how these factors are manifested.

• In terms of formal learning, universities (researched even on the international scale) take a somewhat limited approach to developing and implementing a curriculum that can educate professionals to meet the challenges of working in knowledge-based organizations. The development of the OL capability has a noticeable focus on developing organizational knowledge at a group level rather than at the level of the organization. This approach is limited: the aim and intended learning outcomes focus on the group level; it means specifically designed didactic systems that foster the development of the OL capability on the organization (as an entity) level in university studies are not implemented. As a result, students, including those in management programs, graduate with no even basic knowledge of OL. The research of Lithuanian university cases shows that, instead, they tend to identify organizations and knowledge creation processes that take place in those organizations with the processes that occur in groups.

- The role of educators has to be very much inspiring for the successful development of the OL capability, and they recognize the relevance of OL for contemporary professionals. However, the interviewed educators feel unable to include OL development on the level of the organization in the formal curriculum due to the limited scope and time limitations of their courses. Furthermore, the absence of OL as a learning outcome detracts from the assessment of the OL capability (summative or formative), which results in a lack of students' reflection on their experience in the development of OL capabilities.
- Some teachers created educational environments that could facilitate the development of the OL capability on a group level. However, students perceive and subsequently transform these environments into their personal learning environments differently. Noteworthy in this respect is that students who recognise the educational environments created by the teacher and use them for the development of the OL capability, both recognize and use a wider range of potential learning environments (going beyond the university education) by creating their own personal learning environments in developing their OL capability. It means that students by themselves integrate the possibilities of formal, non-formal, and informal learning in this respect.
- Internships present a unique opportunity for students to develop their OL capability; such internships offer perspectives of formal, non-formal, and informal learning for OL. In the cases investigated for this research, internships are an integral part of the curriculum, although they have little effect on the development of the student's OL capability through formal learning. This is because OL is not included among either the aims or intended learning outcomes in the description of the internship. University teachers do not instruct students on the possibilities of practicing OL during internships. Further, they would appear not to collaborate with internship organizations to create educational environments beneficial to the student's ability to learn about and practice OL during their internship. If the internship organizations involved students in some form of training introducing them to knowledge management systems, then students might be better placed to develop their OL capability through non-formal learning. Unfortunately, students did not report such instances. On the other hand, internships allow students to practice OL in their daily activities at the internship organizations, so that it is possible for students to develop their OL capabilities through experiential learning that occur informally.
- Similarly, students informally develop their OL capability in student and work organizations through experiential learning. While both of these organizations provide environments for the creation of organizational knowledge, involvement in a student organization(s) has less impact on the development of the student's OL capability due to low participation rates in the aforementioned.
- Students who do recognize the importance of developing OL capabilities in formal learning also recognize the possibilities of developing their OL capabilities in non-formal and informal learning. This points to the importance of formal learning for the development of student's OL capability, since formal learning helps students identify the elements of potential learning environments crucial in the development of the OL capability and include them in their personal learning environments.

• The APL system (particularly APEL) which integrates formal, non-formal, and informal learning for the development of the OL capability is of great importance. Unfortunately, the researched university does not use the possibility for the purpose. Willingness to do so would be significant not only from the perspective of the possibilities to recognize and accredit the high level knowledge and skills (both elements of capability) that are learned or developed outside the university, but would also motivate students to seek further possibilities to develop their OL capability in a truly lifelong and life-wide manner.

RECOMMENDATIONS

For the study program coordinators responsible for the quality of studies:

- Review the study program descriptions to include aims and intended learning outcomes related to knowledge creation, organizational learning or knowledge work in general. Students attain these learning outcomes through either studying in courses that require an organization to be simulated or through internships that are usually included in all first cycle study programs in Lithuanian higher education institutions.
- Promote a wider use of teaching/learning methods that simulate real-world organizations or include tasks that require students to engage in activities of a real organization. This way students do not only focus on the subject matter, but also get to experience the learning/knowledge creation processes that take place within those organizations.
- The aims and intended learning outcomes related to organizational learning/knowledge creation must be communicated to potential students and employers alike. This will not only contribute to overall attractiveness of the study programs and employability of the graduates but will also demonstrate stakeholders from the industry the commitment of the university to develop and disseminate innovations and preparedness of the graduates for employment in knowledge-based companies.
- Students involved in activities of the organization (be it a student or work organization) should be made aware of the possibility to formalize the knowledge and abilities they develop while engaged in the organization's activities. This is particularly true for knowledge-based companies that have L&D departments and may have procedures describing knowledge creation processes in the company. In this respect, the introduction of the APL system, in particular the APEL subsystem, would allow to bridge the informal learning with the university curriculum.
- Implement the agile approach to the curriculum in IT and Management study programs. This curriculum serves as an excellent base for PBL and enables students to continuously develop subject matter skills and knowledge as well as transferable skills and knowledge.

For educators:

- The importance of knowledge creation for contemporary organizations has to be communicated to students. While such knowledge and capability are absolutely necessary for IT students as future employees of knowledge-based organizations, and management students as those who manage innovation-driven organizations and their departments, it is also relevant to students in other programs.
- Particular attention has to be devoted to communicating possibilities to develop students' OL capability during internships. To enable students to recognize and reflect on their OL experience during internships, such possibility has to be clearly communicated to them through carefully drafted aims.
- Educators should take measures to exercise formative assessment which is more suitable for assessing students' OL capability. Students have to be given a clear

instruction on how to arrive at the point where their OL experience is considered successful.

- OL can be developed by employing various pedagogical designs/models. Some of the successful examples of knowledge creation that were experienced by students included learning through design (applying design thinking or similar methods). However, there are also empirically tested models such as EDENSOL that allow for successful development of students' OL capability.
- If students are involved in activities of work or student organizations, educators should seek to encourage students to reflect on their experience in them.

For researchers:

- A similar or identical study can be conducted to check the findings of the investigated cases against findings in other fields of studies.
- In this dissertation no data was collected to investigate whether students involved in activities of sports and art clubs can develop their OL capability while engaged in sports and artistic activities.
- While it has been proven that informal learning influences the development of students' OL capability, the extent of this influence needs further investigations.

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Appendices

Appendix A. ***Survey questionnaire***

Gerbiamas (-a) studente,

Kiekvienas universiteto studentas nori pasirengti sėkmingai karjerai darbo organizacijoje. Organizacijos (sampratą žr. ŽODYNĖLYJE, pateikiamame žemiau), veikiančios modernios ekonomikos sąlygomis, yra žinių organizacijos. Tai yra tokios organizacijos, kurių darbuotojai nuolat kuria ir įsisavina inovacijas. Tam reikia organizacinių žinių (sampratą žr. ŽODYNĖLYJE, pateikiamame žemiau), dažniausiai kolektyviai kuriamų pačioje organizacijoje jos darbuotojų. Tokie darbuotojai jaučiasi šios organizacijos nariais, supranta organizacinius tikslus (sampratą žr. ŽODYNĖLYJE) ir sugeba jų siekti.

Studijuojant universitete organizacinių žinių kūrimui pasirengti yra gana sudėtinga . Tam, kad išmoktumėte tokias žinias kurti, neužtenka vien tik išmokti mokytis grupėje, komandoje (sampratas žr. ŽODYNĖLYJE). Reikia pasijusti tikros organizacijos nariu, kuris, kartu su kitais bendradarbiais siekdamas organizacinių tikslų, kuria organizacijai reikalingas žinias.

Šis klausimynas yra skirtas išsiaiškinti, ar studentas, studijuodamas universitete, turi galimybių įgyti organizacinių žinių kūrimo gebėjimų. Labai prašome atidžiai susipažinti su klausimais ir į juos dėmesingai atsakyti. Jūsų atsakymai padės mūsų universitetui tobulinti studijų programas ir kurti papildomas galimybes studentams įvaldyti šiuolaikinių organizacijų darbuotojams svarbius gebėjimus ir šitaip pasirengti darbo karjerai.

Klausimynas yra anoniminis, savo vardo ir pavardės parašyti nereikia. Tačiau prašytume parašyti savo atsakymo kodą – aštuonis simbolius. Kad geriau juos prisimintumėte, tai gali būti, pvz., Jūsų mamos ar tėčio gimimo data, ar kt. Šis kodas yra reikalingas todėl, kad prašysime kelių respondentų, kurių atsakymai suteiks mums ypač svarbaus žinojimo, atsakyti dar į kelis papildomus klausimus.

Šį klausimyną atsakyti įprastai prireikia 30–40 min., priklausomai nuo to, ar respondentas dalyvauja visose klausimyno aprėptose veiklose. Esame labai dėkingi už Jūsų laiką ir pastangas atsakant šį klausimyną. Apibendrinę atsakymus, visus norinčiuosius galėsime supažindinti su rezultatais.

X universiteto Edukacinių kompetencijų grupė

Instrukcija dirbant su klausimynu:

1) Prašome suteikti savo klausimynui kodą, sudarytą iš aštuonių simbolių. Siūlome rašyti mamos arba tėčio gimimo metus, mėnesį skaičiais ir dieną. Jei šis siūlymas netinka, įrašykite kitą kodą.

KLAUSIMYNO KODAS – sudarykite:

2) Kiekvieno klausimo pabaigoje yra numatyti visi galimi atsakymai. Prašome pasirinkti tik vieną atsakymą. Kai kurie klausimai turi ir nenumatytą atsakymą (dažniausiai žymima žodžiu „kita“). Pasirinkus šį variantą, reikia parašyti savo originalų atsakymą.

3) Klausimyne yra vartojami terminai, kurių sampratos yra pateikiamos šiame ŽODYNĖLYJE:
   a) Organizacija – žmonių socialinis vienetas, kuris turi struktūrą (dažniausiai padalinius ar grupes) ir yra valdomas tam, kad būtų suformuluoti ir pasiekti organizaciniai (kolektyviniai) tikslai.
   b) Organizacinis tikslas – tikslas, organizacijos keliamas savo veiklai, siekiant numatytų organizacijos veiklos rezultatų.
   c) Organizacinės žinios – žinios, būtinos norint pasiekti organizacinių tikslų.
   d) Organizacinis mokymasis – organizacijos narių veikla kuriant organizacines žinias.
   e) Grupė – individai, siekiantys bendro tikslo ir nuolat tarpusavyje kontaktuojantys, bendraujantys, darantys įtaką bei jaučiantys draugiškus jausmus vienas kitam.
   f) Grupinis mokymasis – žinių kūrimas, vykstantis grupėje.
   g) Komanda – žmonių, turinčių vienas kitą papildančių įgūdžių, grupė, sutelkta užduočiai atlikti, darbui ar projektui įvykdyti. Komandos nariams būdinga tarpusavio priklausomybė, dalijimasis valdžia ir atsakomybe, atskaitomybė už kolektyvinę veiklą, darbas siekiant bendro tikslo ir atlygio.

4) Kur tai yra įmanoma, atsakymus žymėkite langelyje. Žymėjimo pavyzdys pateikiamas žemiau:
   ☒ **Žymėjimo pavyzdys**

Pradėkime!

1) Ar bent vieno modulio dėstytojas įvardijo organizacinio mokymosi / organizacinių žinių kūrimo gebėjimų ugdymą, pateikdamas modulio tikslus arba siekiamus rezultatus?

a) Taip, aiškiai įvardijo
b) Tai buvo galima numanyti, nors tiesiogiai dėstytojas neįvardijo
c) Ko gero, ne
d) Ne, visai neminėjo

Jei pasirinkote (a) arba (b) atsakymus, išvardinkite modulius, kuriuose šie tikslai arba rezultatai buvo pateikti:

2) Ar bent vieno modulio dėstytojas įvardijo kolektyvinio / grupinio darbo gebėjimų ugdymą, pateikdamas modulio tikslus arba siekiamus rezultatus?

a) Taip, aiškiai įvardijo
b) Tai buvo galima numanyti, nors tiesiogiai dėstytojas neįvardijo
c) Ko gero, ne
Ne, visai neminėjo

3) Ar studijų metu jums teko atlikti užduotis, kurioms reikėjo dirbti nedidelėje grupėje?

a) Taip, dažnai
b) Taip, kartais
c) Taip, bet labai retai
d) Ne, neteko

4) Ar studijų metu Jums teko atlikti užduotis, kurios reikalavo studentų susibūrimo į tam tikslui sukurtą organizaciją (ją paprastai sudaro keli padaliniai / grupės)?
a) Taip, dažnai
b) Taip, kartais
c) Taip, bet labai retai

d) Ne, neteko

Jeigu į 3 klausimą atsakėte neigiamai – pasirinkote (d) variantą, pereikite prie 18 klausimo. Jeigu atsakėte kitaip, atsakykite paeiliui į visus klausimus.

5) Pabandykite prisiminti, kiek suburtoje organizacijoje paprastai buvo grupių / padalinių darbo užduočiai atlikti?

a) 1
b) 2–3
c) 4–5
d) Daugiau nei 5

6) Ar ši suburta organizacija buvo suformulavusi savo veiklos tikslą?
   a) Tikrai taip
   b) Gal ir taip
   c) Ko gero, ne
   d) Tikrai ne

Jeigu į 5 klausimą atsakėte neigiamai – pasirinkote atsakymus (c) ar (d), iš karto pereikite prie 8 klausimo. Jeigu atsakėte kitaip, atsakinėkite į visus klausimus.

7) Ar galite teigti, kad Jūs supratote šį organizacijos tikslą?
   a) Tikrai taip
   b) Iš dalies taip
   c) Ko gero, ne
   d) Tikrai ne
8) Ar galite teigti, kad Jūs aktyviai dalyvavote siekiant šio organizacijos tikslo?
   a) Tikrai aktyviai
   b) Iš dalies taip
   c) Man trūko aktyvumo
   d) Tikrai buvau neaktyvus(i)
9) Ar, atliekant užduotį šioje organizacijoje, savo padalinyje / grupėje Jūs paprastai turėjote įvardytą konkretų vaidmenį?
   a) Tikrai taip
   b) Paprastai vaidmuo būdavo neįvardytas, bet visų savaime suprantamas
   c) Vaidmuo būdavo neįvardytas, tik numanomas, todėl neaiškus
   d) Tikrai ne

   Jei atsakėte teigiamai – atsakymai (a) ar (b), parašykite, kokį turėjote vaidmenį: .....

10) Ar galite teigti, kad atlikdami užduotį su savo padaliniu / grupe dirbote taip efektyviai, kaip paprastai dirba komanda.
    a) Tikrai taip
    b) Iš dalies taip
    c) Ko gero, ne

d) Tikrai ne

11) Ar galite pasakyti, kad Jūsų padalinio / grupės nariai susiformavo bendrą (kolektyvinį) žinojimą, kuris galėjo likti netgi garsiai neįvardytas, bet visiems žinomas?
    a) Tikrai taip
    b) Iš dalies taip
    c) Ko gero, ne
    d) Tikrai ne
12) Ar, spręsdami organizacijai svarbias problemas, iškilusias atliekant užduotį, stengėtės grupėje priimti kolektyvinius sprendimus (t. y. generuodavote kolektyvines idėjas)?

a) Tikrai taip
b) Iš dalies taip
c) Daugiau ne nei taip
d) Tikrai ne

13) Ar visi Jūsų padalinio / grupės nariai dalyvaudavo šiame kolektyviniame problemų sprendime?

a) Tikrai visi
b) Dauguma
c) Mažuma

d) Vienas kitas

14) Ar Jūsų padalinys / grupė priimtus savo kolektyvinius sprendimus pristatydavo kaip pasiūlymus kitiems suburtos organizacijos padaliniams / grupėms, dalyvaujantiems užduoties atlikime?

a) Tikrai taip
b) Iš dalies taip
c) Daugiau ne nei taip
d) Tikrai ne

15) Ar sprendimai būdavo priimami visos organizacijos lygmeniu tik tada, kai būdavo išdiskutuoti visų grupių teikiami pasiūlymai?
    a) Tikrai taip
    b) Iš dalies
    c) Ko gero, ne
    d) Tikrai ne
16) Ar galite teigti, kad esate dalyvavęs (-usi) priimant visos organizacijos lygmeniu svarbius sprendimus užduoties atlikimo metu?

a) Tikrai taip
b) Iš dalies taip
c) Daugiau ne nei taip

d) Tikrai ne

17) Ar, užduoties atlikimo metu priėmus eilinį kolektyvinį sprendimą suburtos organizacijos lygmeniu, su juo būdavo supažindinami visi šios organizacijos nariai?
    a) Tikrai taip
    b) Dauguma
    c) Mažuma
    d) Vienas kitas
18) Ar galite teigti, kad užduoties atlikimo metu organizacijos lygmeniu priimti nauji sprendimai po kurio laiko tapdavo Jūsų veiklos rutina (įprasta norma, apie kurią net negalvojate)?
    a) Tikrai taip
    b) Iš dalies taip
    c) Ko gero, ne
    d) Tikrai ne
19) Ar dėstytojas vertino jūsų įgytą organizacinių žinių kūrimo / organizacinio mokymosi kompetenciją?
    a) Taip, vertino pažymiu
    b) Taip, vertino pateikdamas žodinį atsiliepimą
    c) Negaliu atsakyti
    d) Tikrai ne

20) Ar galite sakyti, kad pagal studijų programą dalyvavote tokioje praktikoje, kurioje Jūsų praktikos organizacija Jus įtraukė į savo veiklą?

a) Tikrai taip
b) Iš dalies taip
c) Daugiau ne nei taip
d) Tikrai ne

<u>Jeigu į 19 klausimą atsakėte pasirinkdami variantą (c) ar (d), praleiskite 20–34 klausimus ir pradėkite atsakinėti nuo 35 klausimo. Jeigu atsakėte kitaip, nuosekliai atsakykite į visus klausimus.</u>

21) Ar universiteto Jums pateiktuose praktikos tiksluose / uždaviniuose buvo numatytas *organizacinių žinių kūrimo / organizacinio mokymosi* kompetencijos vystymas?
    e) Taip
    f) Taip, netiesiogiai, tačiau buvo galima suprasti
    g) Tikslai / uždaviniai nebuvo pateikti
    h) Tikrai ne
22) Ar organizacija, kurioje atlikote praktiką, supažindino Jus su savo veiklos tikslu?
a) Tikrai taip
b) Gal ir taip
c) Ko gero, ne
d) Tikrai ne

<u>Jeigu į 21 klausimą atsakėte pasirinkdami variantą (c) ar (d), toliau tęskite atsakymus, tiesiogiai pereidami prie 24 klausimo</u>. Jeigu atsakėte kitaip, nuosekliai atsakykite į visus klausimus.

23) Ar galite teigti, kad supratote šį organizacijos tikslą?
a) Tikrai taip
b) Iš dalies taip
c) Daugiau nesupratau nei supratau
d) Tikrai ne

24) Ar galite teigti, kad aktyviai dalyvavote siekiant šio organizacijos tikslo?
a) Tikrai taip
b) Iš dalies taip
c) Daugiau ne nei taip
d) Tikrai ne

25) Ar, veikdamas (-a) organizacijoje, kurioje atlikote praktiką, konkrečiame padalinyje turėjote konkrečias pareigas?
a) Tikrai taip, turėjau pareigas
b) Tai daugiau buvo neįvardytas vaidmuo, bet visų savaime suprantamas
c) Mano vaidmuo buvo neįvardytas, tik numanomas, todėl neaiškus
d) Tikrai neturėjau pareigų

    Jei atsakėte „tikrai taip“, parašykite padalinio ir pareigų pavadinimus: .....
    .....

26) Ar galite teigti, kad praktikos metu organizacijoje Jūsų padalinys dirbo taip efektyviai, kaip paprastai dirba komanda.

a) Tikrai taip
b) Iš dalies taip
c) Daugiau ne nei taip
d) Tikrai ne

27) Ar galite pasakyti, kad šio padalinio nariai, tarp jų ir Jūs, įgijote bendrą (kolektyvinį) žinojimą, kuris galėjo likti netgi garsiai neįvardytas, bet visiems žinomas?
e) Tikrai taip
f) Iš dalies taip
g) Ko gero, ne
h) Tikrai ne

28) Ar, spręsdami organizacijai svarbias problemas, stengėtės grupėje / padalinyje priimti kolektyvinius sprendimus (t. y. generuodavote kolektyvines idėjas)?
a) Tikrai taip
b) Iš dalies taip
c) Daugiau ne nei taip
d) Tikrai ne

29) Ar visi Jūsų padalinio nariai dalyvaudavo šiame kolektyviniame problemų sprendime?
a) Tikrai taip
b) Dauguma
c) Mažuma
d) Vienas kitas

30) Ar Jūsų padalinys priimtus savo kolektyvinius sprendimus pristatydavo kaip pasiūlymus kitiems organizacijos padaliniams / grupėms?
a) Taip
b) Iš dalies
c) Ko gero, ne
d) Ne

31) Ar sprendimai būdavo priimami visos organizacijos lygmeniu tik tada, kai būdavo išdiskutuoti visų grupių teikiami pasiūlymai?
a) Tikrai taip
b) Iš dalies
c) Ko gero, ne
d) Tikrai ne

32) Ar galite teigti, kad praktikos metu esate dalyvavęs (-usi) priimant visos organizacijos lygmens svarbius sprendimus?

a) Tikrai taip
b) Iš dalies
c) Ko gero, ne
d) Tikrai ne

33) Ar, priėmus eilinį kolektyvinį sprendimą organizacijos, kurioje atlikote praktiką, lygmeniu, su juo būdavo supažindinami visi šios organizacijos nariai?

a) Tikrai taip
b) Iš dalies
c) Ko gero, ne
d) Tikrai ne

34) Ar galite teigti, kad šios organizacijos lygmeniu priimti nauji sprendimai po kurio laiko tapdavo Jūsų veiklos rutina (įprasta norma, apie kurią net negalvojate)?

a) Tikrai taip
b) Iš dalies taip
c) Daugiau ne nei taip
d) Tikrai ne

35) Ar praktikos aptarimo / gynimo metu vertintojai (praktikos vadovas iš universiteto, praktikos vadovas iš organizacijos, kiti dėstytojai ir t. t.) arba bent vienas iš jų atkreipė dėmesį į įgytas *organizacinių žinių kūrimo / organizacinio mokymosi* žinias ir gebėjimus?

a) Taip, vertino pažymiu;
b) Taip, vertino pateikdamas žodinį atsiliepimą;
c) Ko gero, ne
d) Tikrai ne

Kita.....

☺ ☺ ☺ ☺ ☺ ☺
☺ ☺ ☺ ☺

SVEIKINAME! ATSAKĘ Į 35 KLAUSIMĄ, BŪSITE ATSAKĘ Į DAUGIAU NEI PUSĘ ŠIO KLAUSIMYNO KLAUSIMŲ!

36) Ar universitete dalyvaujate ar dalyvavote kokioje nors studentiškoje veikloje?

a)Taip:

studentų atstovybėje
meno organizacijoje (-ose)

išvardinkite: .....

sporto organizacijoje (-ose)

išvardinkite:.....

kitose organizacijose
išvardinkite:.....
.

b)Ne

<u>Jeigu į 35 klausimą atsakėte „Ne“, praleiskite 36–48 klausimus ir pereikite prie 49 klausimo. Jeigu atsakėte kitaip, nuosekliai atsakykite į visus klausimus.</u>

37) Ar galite pasakyti, kad, dalyvaudamas pažymėtoje studentiškoje organizacijoje, buvote įsitraukęs į jos organizacinę veiklą (sprendėte jos problemas)?
    a) Taip
    b) Iš dalies
    c) Ko gero, ne
    d) Ne

<u>Jeigu į 36 klausimą atsakėte „ne“, pereikite prie 39 klausimo. Jeigu atsakėte kitaip, nuosekliai atsakykite į visus klausimus.</u>

38) Ar ši studentiška organizacija buvo suformulavusi savo veiklos tikslą?
    a) Taip
    b) Iš dalies
    c) Ko gero, ne
    d) Ne
39) Ar galite teigti, kad Jūs aktyviai dalyvavote siekiant šio organizacijos tikslo?
    a) Taip
    b) Iš dalies
    c) Ko gero, ne
    d) Ne

40) Ar, veikdamas studentiškos organizacijos konkrečioje grupėje, turėjote konkretų organizacinį vaidmenį / pareigas?
    a) Tikrai taip, turėjau pareigas
    b) Tai daugiau buvo neįvardytas vaidmuo, bet visų savaime suprantamas
    c) Mano vaidmuo buvo neįvardytas, tik numanomas, todėl neaiškus
    d) Tikrai neturėjau pareigų

    Jei atsakėte „Taip“, parašykite grupės ir vaidmens / pareigų pavadinimus: .....
    .....

41) Ar galite teigti, kad studentiškoje organizacijoje Jūsų grupė dirbo taip efektyviai, kaip paprastai dirba komanda.
    a) Tikrai taip
    b) Iš dalies taip
    c) Daugiau ne nei taip
    d) Tikrai ne
42) Ar galite pasakyti, kad šios grupės nariai, tarp jų ir Jūs, įgijo bendrą (kolektyvinį) žinojimą (jis galėjo likti netgi garsiai neįvardytas, bet visiems žinomas)?
    a) Tikrai taip
    b) Iš dalies taip
    c) Daugiau ne nei taip
    d) Tikrai ne
43) Ar, spręsdami studentiškai organizacijai svarbias problemas, stengėtės grupėje priimti kolektyvinius sprendimus (t. y. generuodavote kolektyvines idėjas)?
    a) Tikrai taip
    b) Iš dalies taip
    c) Daugiau ne nei taip
    d) Tikrai ne
44) Ar visi Jūsų grupės nariai dalyvaudavo šiame kolektyviniame problemų sprendime?
    a) Tikrai taip
    b) Dauguma
    c) Mažuma
    d) Vienas kitas
45) Ar Jūsų grupė priimtus savo kolektyvinius sprendimus pristatydavo kaip pasiūlymus kitoms studentiškos organizacijos grupėms?
    a) Taip

b) Iš dalies
c) Ko gero, ne
d) Ne

46) Ar sprendimai būdavo priimami visos šios studentiškos organizacijos lygmeniu tik tada, kai būdavo išdiskutuoti visų grupių teikiami pasiūlymai?
a) Tikrai taip
b) Iš dalies
c) Ko gero, ne
d) Tikrai ne

47) Ar galite teigti, kad esate dalyvavęs (-usi) priimant svarbius sprendimus visos studentiškos organizacijos lygmeniu?
a) Tikrai taip
b) Iš dalies
c) Ko gero, ne
d) Tikrai ne

48) Ar, priėmus eilinį kolektyvinį sprendimą studentiškos organizacijos lygmeniu, su juo būdavo supažindinami visi šios organizacijos nariai?
a) Tikrai taip
b) Iš dalies
c) Ko gero, ne
d) Tikrai ne

49) Ar galite teigti, kad šios studentiškos organizacijos lygmeniu priimti nauji sprendimai po kurio laiko tapdavo Jūsų veiklos rutina (įprasta norma, apie kurią net negalvodavote)?
e) Tikrai taip
a) Iš dalies
b) Daugiau ne nei taip
c) Tikrai ne

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50) Ar šalia studijų universitete tenka arba teko dirbti ilgiau nei 6 mėnesius kokioje nors darbo organizacijoje?
a) Taip
Parašykite pareigų pavadinimą:
.....

.....
.....

b) Ne

Jeigu į 49 klausimą atsakėte „Taip“, norėtume sužinoti, kokiose organizacinių žinių kūrimo veiklose dalyvavote. Jeigu į 49 klausimą atsakėte „Ne“, praleiskite 50–61 klausimus ir tęskite nuo 62 klausimo.

51) Ar organizacija, kurioje dirbote, supažindino Jus su savo veiklos tikslu?
    a) Taip
    b) Iš dalies
    c) Ko gero, ne
    d) Ne

Jeigu į 50 klausimą atsakėte teigiamai, atsakykite į 51–52 klausimus. Jeigu atsakėte „Ne“, pereikite prie 53 klausimo.

52) Ar galite teigti, kad supratote šį organizacijos tikslą?
    a) Taip
    b) Iš dalies
    c) Ko gero, ne
    d) Ne
53) Ar galite teigti, kad aktyviai dalyvavote siekiant šio organizacijos tikslo?
    a) Taip
    b) Iš dalies
    c) Ko gero, ne
    d) Ne
54) Ar galite teigti, kad darbo organizacijos padalinys / grupė dirbo taip efektyviai, kaip paprastai dirba komanda.
    a) Tikrai taip
    b) Iš dalies taip
    c) Daugiau ne nei taip
    d) Tikrai ne
55) Ar galite pasakyti, kad šio padalinio nariai, tarp jų ir Jūs, įgijote bendrą (kolektyvinį) žinojimą (jis galėjo likti netgi garsiai neįvardytas, bet visiems žinomas)?
    a) Tikrai taip
    b) Iš dalies
    c) Daugiau ne nei taip
    d) Tikrai ne
56) Ar, sprendžiant darbo organizacijai svarbias problemas, jūsų padalinys stengėsi priimti kolektyvinius sprendimus (t. y. generuodavote kolektyvines idėjas)?

a) Tikrai taip
b) Iš dalies
c) Daugiau ne nei taip
d) Tikrai ne

57) Ar visi Jūsų padalinio nariai dalyvaudavo šiame kolektyviniame problemų sprendime?
a) Tikrai taip
b) Dauguma
c) Mažuma
d) Vienas kitas

58) Ar Jūsų padalinys priimtus savo kolektyvinius sprendimus pristatydavo kaip pasiūlymus kitiems organizacijos padaliniams / grupėms?
a) Taip
b) Iš dalies
c) Ko gero, ne
d) Ne

59) Ar sprendimai būdavo priimami visos organizacijos lygmeniu tik tada, kai būdavo išdiskutuoti visų padalinių teikiami pasiūlymai?
a) Tikrai taip
b) Iš dalies
c) Ko gero, ne
d) Tikrai ne

60) Ar galite teigti, kad esate dalyvavęs (-usi) priimant visos darbo organizacijos lygmens svarbius sprendimus?
a) Tikrai taip
b) Iš dalies
c) Ko gero, ne
d) Tikrai ne

61) Ar, priėmus eilinį kolektyvinį sprendimą darbo organizacijos lygmeniu, su juo būdavo supažindinami visi šios organizacijos nariai?
a) Tikrai taip
b) Iš dalies
c) Ko gero, ne
d) Tikrai ne

62) Ar galite teigti, kad šios darbo organizacijos lygmeniu priimti nauji sprendimai po kurio laiko tapdavo Jūsų veiklos rutina (įprasta norma, apie kurią net negalvodavote)?
a) Tikrai taip
b) Iš dalies
c) Daugiau ne nei taip
d) Tikrai ne

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63) Ar galite pasakyti, kad dalyvavote specialiuose organizacinio mokymosi ar organizacinių žinių kūrimo seminaruose ar kituose mokymuose už studijų programos ribų?
Taip:
a) Baigiau MOOC (masinius atvirus internetinius kursus) kursus šia tematika; □
b) Savarankiškai studijavau šią tematiką naudodamas kitas virtualias galimybes;
c) Darbo organizacija organizavo mokymus šia tematika;
d) Mano studentiška organizacija organizavo mokymus šia tematika;
e) Organizacija, kurioje atlikau praktiką, organizavo mokymus šia tematika;
f) Savarankiškai studijavau literatūrą šia tematika;
g) Bendraudamas su žmonėmis, turinčiais didelę organizacinės veiklos patirtį.

64) Ar žinote, kad galima formalizuoti (oficialiai pripažinti) žinias, gebėjimus įgūdžius, įgytus įvairiais neformaliaisiais mokymosi būdais?
a) Taip, žinau;
b) Ne, nežinau.

65) Ar galite pasakyti, kad turite organizacinių žinių kūrimo / organizacinio mokymosi kompetenciją, įgytą Jums studijuojant jūsų studijų programą?
a) Tikrai taip
b) Iš dalies
c) Ko gero, ne
d) Tikrai ne

66) Ar galite pasakyti, kad turite neformaliojo mokymosi būdais (iš patirties, neformaliai mokantis ir kt.) įgytą organizacinių žinių kūrimo / organizacinio mokymosi kompetenciją?
a) Tikrai taip
b) Iš dalies
c) Ko gero, ne
d) Tikrai ne

67) Jeigu organizacinių žinių kūrimo / organizacinio mokymosi kompetenciją įgijote veikdami organizacijoje, t. y. iš patirties, kaip supratote, kad ją įgijote? (atsakyti tik tuo atveju, jei turite veiklos bet kokioje organizacijoje patirties)

a) Jau anksčiau apmąsčiau savo veiklą organizacijoje, įgytas žinias ir gebėjimus
b) Tik atsakydamas (-a) šį klausimyną buvau paskatintas (-a) apmąstyti savo veiklą organizacijoje

68) Ar bandėte, kad neformaliojo mokymosi būdais įgyta organizacinių žinių kūrimo / organizacinio mokymosi kompetencija būtų formalizuota (pripažinta) Jūsų universitete?
a) Taip
b) Ne
c) Tokios kompetencijos nesu įgijęs neformaliojo mokymosi būdais

69) Ar neformaliojo mokymosi būdais įgyta organizacinių žinių kūrimo / organizacinio mokymosi kompetencija buvo Jūsų universiteto formalizuota (pripažinta)?
d) Taip
e) Ne
f) Tokios kompetencijos nesu įgijęs neformaliais būdais

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70) Prašytume pateikti keletą duomenų apie save, neišryškinančių Jūsų asmens.

69.1 Studijų programos, kurią studijuojate, pavadinimas:.....

69.2 Studijų programos, kurią studijuojate, specializacijos pavadinimas:.....

69.3 Kursas:.....

69.4 Lytis:

a) Mot.

b) Vyr.

c) Nenoriu atskleisti

69.5 Jūsų darbo stažas (jei turite):

a) iki 6 mėn.

b) 6–12 mėnesių;

c) 1–2 metai

d) 2–3 metai

e) 3–4 metai

f) >4 metai.

69.6 Ar esate / buvote studentų atstovybės narys (-ė)?

a) Taip

b) Ne

69.7 Ar esate / buvote universiteto meno kolektyvo narys?

a) Taip

b) Ne

69.8 Ar esate / buvote universiteto sporto kolektyvo narys?

a) Taip

b) Ne


DĖKOJAME UŽ ATSAKYMUS!


Appendix B. Results of Mann-Whitney U test on questions Q55, Q56, Q58, and Q62

	IT/MAN	N	Mean Rank	Sum of Ranks
Q55	1	122	86.63	10568.50
	2	55	94.26	5184.50
	Total	177		
Q56	1	122	85.74	10460.50
	2	55	96.23	5292.50
	Total	177		
Q58	1	122	87.33	10654.50
	2	55	92.70	5098.50
	Total	177		
Q62	1	122	88.94	10850.50
	2	55	89.14	4902.50
	Total	177		

	Q55	Q56	Q58	Q62
Mann-Whitney U	3065.500	2957.500	3151.500	3347.500
Wilcoxon W	10568.500	10460.500	10654.500	10850.500
Z	-1.051	-1.410	-.705	-.026
Asymp. Sig. (2-tailed)	.293	.158	.481	.979

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