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KAIJA KUMPAS-LENK

IMPLEMENTATION OF OUTCOME-BASED EDUCATION IN ESTONIAN HIGHER EDUCATION: THE DESIGN OF LEARNING OUTCOMES MATTERS

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IMPLEMENTATION OF OUTCOME-BASED EDUCATION IN ESTONIAN HIGHER EDUCATION: THE DESIGN OF LEARNING OUTCOMES MATTERS

School of Educational Sciences, Tallinn University, Tallinn, Estonia

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Author's contribution

I. Developing research design and questions; writing the theoretical framework; gathering the Estonian data; co-conducting data analysis; interpreting the results and writing the discussion and conclusion.

II. Developing research design; contribution to the theoretical framework; conducting data analysis; interpreting the results and writing the discussion and conclusion.

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Related publications

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Kumpas, K., & Õunapuu, T. (2011). Improving learning quality through outcome-based course evaluation: A step towards student-centered learning. ICERI 2011 4th International Conference of Education, Research and Innovation. Publications, 3180−3188. (V-3654-2011).

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PROLOGUE

I have always been passionate about students' learning, curiosity and motivation to acquire new knowledge and skills that are meaningful, important and valuable both individually as well as for the whole of society. This dissertation reflects my passion that increased even further after some students from the Estonian Entrepreneurship University of Applied Sciences (EUAS) approached me (when I was the Head of one EUAS study centre) after one of the lectures and asked demandingly: "What was I supposed to gain from this course?" I was surprised by the question and naively asked: "What do you mean? Have you looked at the course programme and the aims?" Some of them had, some of them hadn't, but as it turned out, the reason was not whether they were familiar with the aims of the studied course, their issue was far more complex. They were struggling to understand the meaning of learning, the value of the predicted outcomes of learning and the reasoning for the need of such learning proposed at their attended course. They did not understand the meanings and actions behind the aims of teaching and where the studied topic should lead them to. They were confused, uncomfortable and not satisfied with their learning experience. There was a strong demand for a change by the students, but they were also struggling to agree where should this change lead to, what was their role in the change and finding a consensus in what they thought they actually wanted.

This happened in the spring of 2009. Since September 2009 it has been compulsory for all the higher education institutions in Estonia to describe their curricula, modules and courses from the perspective of student learning by predetermining the skills, knowledge and attitudes students ought to achieve as a result of their learning: known as learning outcomes. This dissertation reflects one part of the Estonian student journey in outcome-based education, by focusing on their learning experiences and aspects influencing those experiences. Through this dissertation, I hope to bring the student voice to the forefront of the implemented changes in higher education and draw attention to the crucial aspects which would help to improve student learning experiences and outputs in student lives.

INTRODUCTION

Only a few decades ago it was common that people acquired one profession and worked in that profession for their whole lives. However, globalisation and the revolution of information technology – the internetization – have profoundly altered the structural parameters and the operational modes of most national economies during the past few decades. Scientific developments which create new solutions and opportunities, also cause changes in every sector of life. Financial interdependence has created not only global value chains and a shared economy, but also extensive lack of certainty, vulnerability and economic risk, even crises (Elms & Low, 2013; Organisation for Economic Co-operation and Development [OECD], 2018). These vast developments in technology and economy are affecting individual lives and have led to enormous changes in society. It has become evident that the model of functioning professionally as it was 30 years ago, is no longer effective. Responding to the needs of today's and future societies it has been emphasised that the labour market needs people with specialised knowledge and transferable skills (e.g. critical thinking, creative thinking, problem solving, self-regulation, team-work) to meet complex demands in unknown and evolving circumstances in society (European Commission, 2017; OECD, 2018). Hence, the question is – where does society turn to in order to find people with such competencies?

Inevitably society turns to education, which in the face of a complex world can make the difference between whether people confront the challenges they are faced with or whether they are defeated by them (OECD, 2018). Higher education institutions play a significant role in developing society by providing education and research at the highest level. In doing so, the responsibility of higher education is to build the bridge between students and the world of work and their self-actualisation. Holding the umbrella view of global trends and future prosperities of the skills and competencies that warrant teaching allows universities proactively to contribute in supporting the development of a society with citizens who are active lifelong learners. However, one of the key challenges for higher education institutions today is how to inspire students to take an active role and responsibility in their own knowledge construction (Barr & Tagg, 1995; Spady, 1994; McCabe & O'Connor, 2014). In order to do that, students need a clear understanding of what is the purpose of their learning. Learning outcomes – the skills, knowledge and attitudes students ought to develop as a result of their learning are essential tools for providing students with direction in their learning (Biggs & Tang, 2011; Spady, 1994). It is then the responsibility of the student to use learning outcomes for the purpose of their learning (Biggs, 2014; Ramsden, 2003). The teacher's role is to support student learning and achievement of learning outcomes by creating student-centred learning environments, where the different aspects of the learning process are aligned (Biggs, 2014). Such ways of learning have been summed up in the concept of outcome-based education (Biggs & Tang, 2011; Spady, 1994). However, changes do not come easily. Higher education institutions have been traditional for a long time and teachers are used to teach and design learning processes in ways where the teacher is the knowledge transmitter and

the student is the knowledge receiver (Botha, 2002; Pilli & Vanari, 2013; Tammets & Pata, 2013). It is evident that these ways of learning are not effective in today's society.

Research has constantly highlighted over the past decade that there is a substantial difference among what is offered by education and what the labour market needs (European Centre for the Development of Vocational Training [Cedefop], 2017; Haridus- ja Teadusministeerium, Eesti Koostöö Kogu, & Eesti Haridusfoorum, 2014; Sadler, 2016). Therefore, learning outcomes have become crucial, especially in higher education since it ought to provide the transferable link to the labour market (Cedefop, 2017; Redeker et al., 2012). For supporting universities in responding to the societal and labour market needs multiple policies and frameworks have been developed at international and national levels, which all help universities to modernise education and therefore improve the quality of teaching and learning. Evidently, learning outcomes and outcome-based education play crucial roles within these policies (Biggs & Tang, 2011). In Europe, learning outcomes are central in the Bologna Process and its actions – which not only aim to provide transparency and individual learning paths for students, improve the quality of higher education, widen the access and participation in higher education, but also to reduce dropout rates and support the paradigm change from teachers teaching to students learning (Cedefop, 2017; European Commission, 2015). Moreover, it is emphasised that learning outcomes along with outcome-based education, help to transform education to be more student-centred (Adam, 2008; European Commission, 2015). In return, a student-centred approach ought to help universities in designing engaging learning experiences for supporting each individual student's development of their skills and knowledge, which are needed for the future life and the labour market (Biggs & Tang, 2011; Cedefop, 2017; Theobald, Windsor, & Forster, 2018).

One of the ways of achieving a student-centred approach in learning is by implementing the model of constructive alignment developed by J. Biggs (1999). The model of constructive alignment has shown to be useful for universities in designing learning processes in outcome-based education that support students in being actively involved and taking responsibility for their learning (Biggs & Tang, 2011; Larkin & Richardson, 2013; Ramsden, 2003; Shepard, 2000). Based on the principles of constructive alignment learning outcomes are the starting point for any course unit design (Biggs & Tang, 2011). However, it is not a given that a particular design will add the expected value to student learning (Cedefop, 2017). For supporting students' meaningful learning, teachers need to design and deliver learning processes where the learning outcomes, teaching methods and assessment are aligned (Biggs, 2014; Biggs & Tang, 2011). However, the constructively aligned learning process is effective only when students are motivated to learn, satisfied with their learning experience and engaged with their learning (Biggs & Tang, 2011).

However, despite the efforts at political and institutional levels in supporting students' active participation and designing learning processes from the students' perspective, research in Estonia and elsewhere shows that the noble goals of

outcome-based education are not implemented as expected (Hadjianastasis, 2017; Pilli & Vanari, 2013; Udam, Seema, & Mattisen, 2015). Critics emphasise that outcome-based education involves a culture shift, which cannot be achieved top-down – by setting qualifications frameworks (Cedefop, 2017) and processes of policy regulated quality assurance (Hussey & Smith, 2008) without involving teachers and students in this process (Botha, 2002). Teachers, who play the key role in transforming higher education, are confused and struggle in designing engaging learning outcomes (Dean & Wright, 2017; Morcke, Dornan, & Eika, 2013; Hadjianastasis, 2017; Pilli & Vanari, 2013; Tammets & Pata, 2013). Moreover, it is claimed that the whole system of learning outcomes with constructive alignment at its core, cannot be implemented unless teachers find a meaningful and constructive way to reach the students (Hadjianastasis, 2017). To achieve constructive alignment, teachers need to transform their ways of thinking about learning (Biggs, 2014). Currently, there is a substantial gap in the evidence regarding the impact of how teachers are designing outcome-based courses and how students are learning within outcome-based courses. Research in Estonian higher education has revealed that despite the implementation of learning outcomes for almost a decade, students still tend to choose the role of a passive learner (Pilli, Sammul, Post, Aasjõe, & Kruusamäe, 2013; Roosalu et al., 2013). Additionally, there is a widespread concern that students are becoming less engaged with their studies, which is detrimental to student learning and achievement of the learning outcomes (Kahn, 2014; Kuh, 2009). Disengaged students are more likely to be at risk of dropping out of the education system (Fredericks, Blumenfeldt, & Paris, 2004). As student engagement is perceived as a key factor in producing better outcomes (Trowler, 2010) and may be fostered through the process of design, implementation, and evaluation of student learning (Theobald, Windsor, & Forster, 2018), it is essential to investigate the interrelations between these variables. As students are part of society and creators of the new generation, it is important to explore their learning experiences and identify the aspects in the learning process, which do have an impact on the depth and quality of learning in outcome-based education.

This all leads to a need to thoroughly investigate how the implemented outcome-based education influences student learning experiences in achieving the learning outcomes. **Thus, the aim of the current dissertation is to explore how the design of learning outcomes, the aspects of the learning process and student factors support students' achievement of learning outcomes.**

This dissertation consists of an analytical overview and three peer-reviewed articles. The analytical overview is based on the literature review and the empirical results of the three articles (I-III). Research questions are presented at the end of chapter 1.

1. LITERATURE REVIEW

The following chapters provide the theoretical synopsis of the dissertation. The literature overview is divided into two underpinning reasons for the implementation of outcome-based education, namely: 1) socio-economic and political; 2) educational and pedagogical. According to the Bologna Process and its policies, socio-economic reasons are the key drivers for the changes in education, but little is known how these pursued changes are reflected in the pedagogy of higher education and in the perspective of students, who are at the heart of the conducted changes. Therefore, the literature review will first bring together the socio-economic and political aims in promoting the use of learning outcomes and then a sharper focus will be placed on the educational context and pedagogical perspectives. Next, the outcome-based learning process is introduced and opened in more detail in the following sub-chapters of constructive alignment, design of learning outcomes and teachers' competencies in designing learning outcomes. At the end of the literature review chapter the aims and research questions are presented.

1.1. NEED FOR CHANGE IN HIGHER EDUCATION

1.1.1. Socio-economic and political context

Immense developments in economy, technology and the environment have led to a situation where 19th century teaching and learning methods, in which learning is based on an input given by teachers and students have the role of passive knowledge receivers, do not adequately respond to the future challenges of individuals, society and economy (Spady, 1994; Cedefop, 2017). The traditional approach to education is not effective in circumstances where the possibilities to learn whenever, wherever and whatever one wants are constantly increasing (European Commission, 2017). Ultimately, the changes in the needs of the labour market, which define the competencies and skills with the needs to maintain employability, have been the main reasons why universities and policy makers have been forced to refocus their actions in education to learning outcomes – the knowledge and skills and attitudes students attain as a result of their higher education studies (Adam, 2008; Biggs & Tang, 2011; Cedefop, 2017; Spady, 1994; Theobald, Windsor, & Forster, 2018).

For reducing the gap between the needs of the labour market and the outcomes of higher education studies, policies have been developed for reforming higher education. In Europe the Bologna Declaration (1999) was signed by 19 ministers to develop a comparable, compatible and coherent system for European higher education. This voluntary multi governmental agreement has initiated a series of actions under the name of the Bologna Process (Bologna Declaration, 1999). Today, 48 countries are implementing Bologna Process actions and reforming their own education system based on the mutual agreements (European Higher Education Area, 2018). On the one hand, the Bologna Process has been an important catalyst for the

development of international (e.g. European Qualifications Framework, ECTS Users Guide, Diploma Supplement) and national policies (Paris Communiqué, 2018). On the other hand, the Bologna Process has influenced the field of higher education by supporting and initiating the change in the teaching and learning paradigm – to transform the traditional Humboldtian university model that had dominated European higher education for many centuries (Cedefop, 2017; Paris Communiqué, 2018). This means that instead of teachers teaching, the focus is now on students learning and maximising each student's individual development (Biggs & Tang, 2011; Cedefop, 2017). The overall aim of the Bologna Process was to develop a higher education area, which would improve the efficiency and the access to higher education by providing easily readable and comparable degrees (European Commission, 2015). Learning outcomes are the central tools in implementing these aimed changes in European higher education (Adam, 2008; Cedefop, 2017).

Since the emergence of the Bologna Process, the number of students attending higher education courses has grown rapidly (Cedefop, 2017) and become evident that the students, who attend today's universities, are no longer only the academic elite (Larkin & Richardson, 2013). The massification of higher education has pressured higher education institutions to define and demonstrate their competence in effective teaching to a more diverse group of students (Larkin & Richardson, 2013; Zundans-Fraser & Bain, 2016). Moreover, to attain transparency and quality in education, universities need to rethink curricula and qualifications in terms of how to respond to the needs of the labour market and society.

Although there is agreement concerning the usefulness of learning outcomes among practitioners and policy developers, several critical questions have been posed about how the new policy aims are achieved in practice. Harvey and Kamvounias (2008) stressed that there is a gap between institutional policy and the practice of teaching initiatives, especially when a top-down approach is used. Havnes and Prøitz (2016) add that the political and management purposes may weaken learning outcomes' potential to direct teaching and learning and therefore to improve the quality of both. Murtonen and colleagues (2017) have argued that this might be due to the behaviouristic background, which the Bologna Process actions e.g. qualifications framework, policies (European Qualifications Framework, ECTS Users Guide, Diploma Supplement) are somewhat carrying with (Murtonen, Gruber, & Lehtinen, 2017). Outcome-based education is also criticised for giving curriculum developers unwarranted authority over knowledge and understanding (McKernan, 1993). Instead of using learning outcomes as an educational tool and designing learning outcomes in the learning community together with students (Schwarz & Cavener, 1994), they are often seen as a bureaucratic burden that is aligned to audit processes and performance indicators of teachers teaching and students learning (Hussey & Smith, 2008).

Others emphasise that the rise of mass and universal forms of education cause problems in student engagement and achievement of learning outcomes (Kahn, 2014; Larkin & Richardson, 2013), and little is known about the quality of learning

outcomes within courses and the actual state of learning outcomes in higher education. The analysis of course unit learning outcomes of the ten leading universities in the world demonstrated that the quality of the designed learning outcomes was quite poor and needed further development to be aligned with internationally accepted practices (Schoepp, 2017). In alignment with the growing focus on quality assurance in higher education and the development of policies that emphasise student-centred approaches in education, much of the current learning outcomes literature focuses on debating whether learning outcomes are the driving force in the paradigm shift from teaching to learning (Adam, 2008) or is it an accountability tool (Prøitz, 2015). However, surprisingly little attention has been paid to investigating how learning outcomes and outcome-based education has been implemented in university programmes course units – where the changed method of teaching ought to happen. It has been argued that the modernisation of higher education cannot be complete, since national frameworks are usually not supplemented by the supporting pedagogy for teachers in adjusting their teaching practices (Delany et al., 2016). All these tensions and concerns highlight that the topic of using learning outcomes may not be taken with ease.

In Estonia the concept of learning outcomes was introduced in the Standard of Higher Education in 2007 (Valk, 2008) and in 2009 the formulation of learning outcomes became compulsory for all higher education institutions in Estonia (Vabariigi Valitsus, 2016). The Standard of Higher Education states that learning outcomes should be designed at the threshold level (Vabariigi Valitsus, 2016). Moreover, the standard sets general learning outcomes for undergraduate studies based on the European Qualification Framework (Vabariigi Valitsus, 2016), which universities ought to follow in designing curricula and course programmes (Tammets & Pata, 2013). Next to the Standard of Higher Education, the importance of learning outcomes has been highlighted in the Estonian Lifelong Learning Strategy 2020 (Haridus- ja Teadusministeerium et al., 2014). The main goal of the Estonian Lifelong Learning Strategy 2020 is to provide all people in Estonia with personalised learning opportunities that respond to their needs and capabilities throughout their lifespan for maximizing opportunities for self-realization within society (Haridus- ja Teadusministeerium et al., 2014). For reaching this aim, the focus on student-centred learning is strongly promoted (Udam, Seema, & Mattisen, 2015). Learning outcomes are considered as one of the tools that help to foster a student-centred approach (Haridus- ja Teadusministeerium et al., 2014). When the obligation to formulate learning outcomes was introduced in Estonia, the Ministry of Education and Research invested into extensive optional training courses for teachers and staff in higher education institutions through European Union funds. Within these courses the design of learning outcomes was introduced through the principles promoted by Biggs (1999) constructive alignment and Bloom's Taxonomy of cognitive demand (Krathwohl, 2002).

However, there seems to be a dissonance between the noble aims of the Bologna Process reforms and the actual teaching and learning practices in responding to the

labour market needs. Firstly, the statistics demonstrate that Estonian student dropout rates have not declined since the implementation of the Bologna Process actions. Estonian student dropout rates have been slightly rising (15% to 18%) in the past decade (Haridussilm, 2018). Secondly, it is claimed that the new approach for learning has been implemented in theory, but not as a conceptual change in thinking about the learning process (Haridus- ja Teadusministeerium et al., 2014). For example, the research by Tammets and Pata (2013) revealed that teachers did not follow the obligatory guidelines provided in the Standard of Higher Education for developing their course unit programmes. Thirdly, despite the efforts to transform the higher education sector, research shows that Estonian students tend to choose to be passive learners (Pilli et al., 2013; Roosalu et al., 2013; Vadi, Reino, & Aidla, 2014). This is supported by a student survey which revealed that there is a gap between student expectations and the actual curriculaavailable for both personal and professional development (Kirss, Nestor, Haaristo, & Mägi, 2011). However, research in Estonia has also shown that students have not had enough freedom and opportunities to take responsibility for their learning and choose assignments that interest them (Roosalu et al., 2013). These results indicate that both students and teachers still tend to choose traditional ways of teaching and learning characteristic of the Humboldtian idea of university. Overall, the research in Estonia shows that despite the implementation of outcome-based education for almost a decade, universities are still in a transition phase toward student-centred learning (Pilli & Vanari, 2013; Udam, Seema, & Mattisen, 2015).

Even though the concept and impact of learning outcomes could be potentially investigated from different perspectives, in this dissertation, the focus is placed on the institutional level. More precisely, the concept is regarded from an educational perspective to explore how learning outcomes in course units are designed, how the aspects of the learning process are supporting students in achieving the learning outcomes and how the outcome-based learning process is related to student motivation and engagement to study and their satisfaction with the studied course unit. The following chapter will elaborate on the educational context of using learning outcomes.

1.1.2. Educational context and pedagogical perspectives

The underlying idea of formulating learning outcomes is to clarify the goals of the learning process through the student perspective (Biggs, 1999). From the pedagogical perspective, the usage of learning outcomes is defined through a broader concept of outcome-based education. According to Spady: “Outcome-based education means clearly focusing and organising everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences. This means starting with a clear picture of what is important for students to be able to do, then organising curriculum, instruction, and assessment to make sure this learning ultimately happens” (Spady, 1994, p. 12).

Hence, the key of designing outcome-based education is to develop a clear set of learning outcomes which will be the basis for designing the whole learning process: determining the course unit content, its organisation, the teaching- and assessment methods, and deciding how to create the learning environment that enables and encourages all students to achieve those learning outcomes (Biggs & Tang, 2011; Harden, Crosby, Davis, & Friedman, 1999; Spady, 1994). Substantially, the planning of teaching and assessment based on learning outcomes should help to ensure that all learners will learn and achieve significant outcomes to high standards as a result of the challenging and cognitively engaging learning experiences (Deneen, Brown, Bond, & Shroff, 2013; Hattingh & Killen, 2004). With these actions, outcome-based education pursues to encourage practical and employability oriented qualifications that place greater emphasis on transferable skills that could be easily implemented to academic study (Cedefop, 2009).

The novelty of outcome-based education is claimed to be an outgrowth from the movement away from behaviourist transmission models to constructivist, learner-centred models that emphasise the importance of student learning (Hannafin, Hill, & Land, 1997; Biggs & Tang, 2011). While there is a lot of confusion about what student-centred learning is (Lea, Stephenson, & Troy, 2003) and while it can take different forms of teaching in practice, the main aim of student-centred teaching is fostering deep approaches to learning (Hannafin, Hill, & Land, 1997; Lea, Stephenson, & Troy, 2003). Deep approaches to learning mean that students focus on the understanding of meaning, on looking at connections between new and previously acquired knowledge and on engaging meaningfully with the subject matter (Biggs & Tang, 2011). Ultimately, student-centred learning ought to encourage students in becoming active and autonomous learners who take responsibility for their learning and independently construct different pieces of information into a meaningful and coherent understanding of the subject under study (Attard, Di Ioio, Geven, & Santa, 2010; Barr & Tagg, 1995; Biggs & Tang, 2011; Lea, Stephenson, & Troy, 2003; McCabe & O'Connor, 2014; Prosser & Trigwell, 1999; Spady, 1994). An autonomous learner in this context is regarded as someone who is motivated and engaged in their learning (Ryan & Decy, 2000). Learning outcomes, however, should direct students in their learning paths in becoming active and autonomous learners (Barr & Tagg, 1995; Biggs & Tang, 2011; Huba & Freed, 2000).

Although, outcome-based education aims to support students in becoming autonomous and self-regulated learners from the pedagogical perspective, no meaningful learning can happen, if students are not motivated to learn (Bandura, 2006; Schunk, Pintrich, & Meece, 2008), engaged with their learning (Biggs, 2014; Carini, Kuh, & Klein, 2006; Kahu, 2013) and satisfied with their learning experiences (Lizzio, Wilson, & Simons, 2002). Moreover, these student factors have been shown to influence the implementation of outcome-based education and students' achievement of learning outcomes (Biggs & Tang, 2011). Therefore, this study also focuses on the student factors in the outcome-based learning process – such as

motivation, engagement and satisfaction (See Figure 1). The general concepts of each of the abovementioned student factors are subsequently described.

Since students have extensive opportunities in making observations during their studies it has been found that student perceptions provide a valid and reliable image of their learning environment and of the learning process (Spooren, Brockx, & Mortelmans, 2013). Research has shown that positive student perceptions influence academic achievement, skill performance and motivation for learning (Lizzio, Wilson, & Simons, 2002). In this study, motivation is conceptualised as an internal state that arouses, directs, and sustains goal-oriented behaviour (Bandura, 1977). The level of motivation determines whether or not a person is interested in engaging to learn, to finding relevant academic activities and obtaining the intended benefits from it (Brophy, 2013). Learning outcomes ought to support student motivation in finding the benefits of learning. Therefore, it is important that teachers guide students to use learning outcomes as a foundation of their learning (Biggs, 2014).

Student engagement, alongside motivation, has been highlighted in the literature as one of the key factors, which enables learning and is vital to the achievement of learning outcomes (Bryson, 2014; Fredericks, Blumenfeldt, & Paris, 2004; Kahu, Nelson, & Picton, 2017; Trowler, 2010). Although student engagement is conceptualised through the students' role in and commitment to their learning, Leach, Zepke, and Butler (2014) argue that the concept of engagement is far more complex. Kahu (2013) fits the different aspects of the concept of engagement into four perspectives – behavioural, psychological, socio-cultural and holistic. The current doctoral study focuses on the behavioural and psychological perspectives of engagement. The behavioural perspective of engagement, defined as students' investment of time and energy in their own learning, is widely used in the literature of higher education studies (Kahu, 2013; Leach, Zepke, & Butler, 2014). It emphasises student behaviour and teaching practice (Kahu, 2013). As outcome-based education ought to change traditional teaching practices into student-centred ones, one might assume that in the due course students learning behaviours also change. However, as the behavioural perspective of engagement alone is considered somewhat narrow, it is complimented by the psychological perspective. The psychological perspective considers engagement as an internal psycho-social process that evolves over time and varies in intensity, consisting several dimensions of engagement, such as behaviour, cognition, emotion and conation (Kahu, 2013). The behavioural dimension can be described through student involvement in learning, asking questions and participation in extracurricular activities (Fredericks, Blumenfeldt, & Paris, 2004). The cognitive dimension refers to students' effective use of self-regulation and deep learning skills (Fredericks, Blumenfeldt, & Paris, 2004). The dimension of emotion is described by students' instrumental and intrinsic motivation (Kahu, 2013). The conation dimension is about students will to succeed (Kahu, 2013).

Kuh (2007) emphasises the importance of institutions role and resources of supporting student engagement and including students to participate in activities that

lead to the desired outcomes. Learning outcomes in this context are crucial starting points for teachers in fostering student engagement (Kahu, Nelson, & Picton, 2017; Trowler, 2010). Engagement may be enhanced when teachers create powerful learning environments (Entwistle, 2003, 2010), which provide authentic tasks and realistic problems, support meaningful learning and enhance students' awareness of their cognitive processes and their ability to control their motives (De Corte, 2000). Through being engaged with their study students do not only acquire skills and knowledge, but also experience academic success and personal growth (Kahu & Nelson, 2018). However, the lack of clarity and understanding of the primary purpose of learning outcomes may reduce student engagement to learn (Brooks, Dobbins, Scott, Rawlinson, & Norman, 2014; Hadjianastasis, 2017). Moreover, disengaged students are more likely to experience learning difficulties and are at high risk of dropping out of school (Fredericks, Blumenfeldt, & Paris, 2004). Therefore, it is important for teachers to focus of on students learning instead of the teacher teaching, because it more likely leads students to engage and succeed in achieving the learning outcomes (Zepke & Leach, 2010). Next to motivation and engagement, satisfaction has been emphasised as an important student factor in achieving learning outcomes (Biggs & Tang, 2011). However, only a small number of studies have examined student perceptions of their learning practices and satisfaction with their studies (e.g. Lizzio, Wilson, & Simons, 2002; Entwistle, McCune, & Hounsell, 2002). There is evidence that student satisfaction relates to perceptions of being able to achieve success and feelings about the achieved outcomes (Keller, 1983). Student perceptions of satisfaction are related to the development of higher order cognitive capabilities (Lizzio, Wilson, & Simons, 2002). As students have high expectations of teachers in supporting their learning and achievement of learning outcomes (Leach, Zepke, & Butler, 2014) it has emerged that student expectations have a significant influence on student satisfaction (Alves & Raposo, 2007). However, when students' experiences do not meet their expectations at university (Darlaston-Jones et al., 2003) they become unsatisfied and reluctant to learn (O'Brien & Brancaleone, 2011). Here learning outcomes ought to help teachers in making their intentions transferable (O'Brien & Brancaleone, 2011) so that students are able to develop adequate expectations for their learning experiences.

1.2. OUTCOME-BASED LEARNING PROCESS

The fundamental assumption of the current research was that meaningful learning and achievement of learning outcomes occur in an active and engaging learning environment that enables and encourages student learning and knowledge development (Theobald, Windsor, & Forster, 2018; Wang, Su, Cheung, Wong, & Kwong, 2013). For supporting student achievement of the learning outcomes, it is relevant to design the learning process in ways which would activate student learning. Although learning outcomes are the foundation for a curriculum, its modules and course unit design, it has been stressed that course unit design is the first characteristic in the learning environment that teachers should focus on (Kember, 2004; Fink,

2013). As described in the previous chapter, one of the widely suggested models for designing course units in outcome-based education is the student-centred model of constructive alignment (Biggs & Tang, 2011; Larkin & Richardson, 2013; Ramsden, 2003; Shepard, 2000). According to the constructive alignment model, the learning outcomes, teaching and learning activities and assessment methods must be aligned (Biggs, 2014). The alignment principle is significant, because it aims to support student active learning and knowledge building is also emphasised in the concept of outcome-based education (Biggs, 2014). Therefore, this study builds on Biggs course unit design model of Constructive Alignment (1999) and the design of learning outcomes. However, the constructively aligned learning process alone does not guarantee that teachers are successful in supporting students in becoming active and autonomous learners. In addition, students need to be motivated to learn (Bandura, 2006; Schunk, Pintrich, & Meece, 2008), engaged in their studies (Biggs, 2014; Carini, Kuh, & Klein, 2006; Rytkönen, Parpala, Lindblom-Ylänne, Virtanen, & Postareff, 2012) and satisfied with their learning experiences (Lizzio, Wilson, & Simons, 2002) to achieve the learning outcomes. This means that the constructively aligned course unit should be designed in ways that challenge students beyond their current level of mastery, sustain their motivation, engagement (Brophy, 2013) and satisfaction (Lizzio, Wilson, & Simons, 2002). Hence, this study also builds on the literature of how motivation, engagement and satisfaction are affecting student achievement of learning outcomes. The theoretical focus of this research is shown in Figure 1.

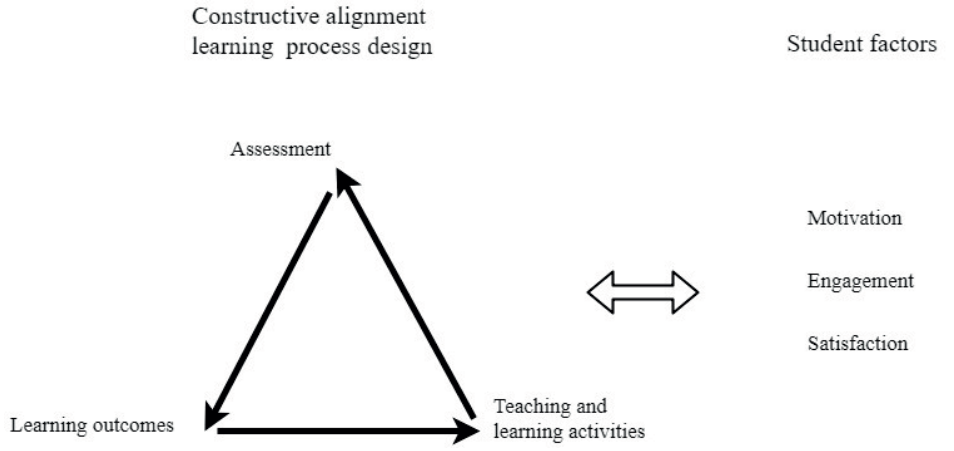

Figure 1. Outcome-based learning process based on the model of constructive alignment. Compiled by the author based on Biggs and Tang (2011).

1.2.1. Constructive alignment

Constructive alignment is an outcomes-based approach to teaching in which the learning outcomes that students ought to achieve are defined before teaching takes

place (Biggs, 2014). Notably, the learning outcomes act as a catalyst for designing the teaching and learning activities and assessment methods, which lead to the desired learning and achievement of learning outcomes (Biggs, 2014). The key in succeeding in such an approach lies on the alignment principle (Larkin & Richardson, 2013). More generally, constructive alignment is based on two principles – the constructive nature of learning and the coherent linking of learning outcomes, teaching and assessment (Biggs & Tang, 2011). Based on the theory of constructivism students construct their knowledge from their learning experiences (Biggs & Tang, 2011; Fan & Zhang, 2014). Within the learning process students are urged to be actively involved in their learning. The teacher's role is to be a facilitator who helps students to develop and assesses their understanding. In the constructive learning environment, the knowledge is not an inert factoid to be memorised, rather the opposite, knowledge is conceptualised as dynamic and ever-changing. The focus of the teacher ought to be on showing students how the knowledge can most effectively be constructed (Fan & Zhang, 2014).

Larkin and Richardson (2013) studied constructive alignment based on student perceptions and found that constructive alignment facilitated improved student outcomes. They also emphasised that constructive alignment contributes to supportive academic environments that facilitate learning of more diverse groups of learners (Larkin & Richardson, 2013). Based on the student feedback, the alignment between learning outcomes and assessment demonstrated the support given to their learning by guiding unit content, note taking and revision practices (Brooks et al., 2014). All this might be one of the reasons why constructive alignment principles have increased in popularity in European higher education (Ramsden, 2003; Shepard, 2000). Far more significant, research has shown that students in more constructively aligned courses were more likely to adopt deep learning approaches and less likely to use surface learning approaches compared to less constructively aligned courses (Karagiannopoulou & Milienos, 2015; Wang et al., 2013). Additionally, courses where teaching is neither congruent with expressed aims nor involves critical thinking are more likely to foster a surface approach (Karagiannopoulou & Milienos, 2015). The surface approach refers to activities on an inappropriately low cognitive level, which yields fragmented outcomes that do not convey the meaning of the encounter. Therefore, students who encounter the surface approach tend to have lower engagement with their studies (Biggs, 2012).

Learning outcomes are the starting point of designing constructively aligned learning processes (Biggs, 2014). However, Hadjianastasis (2017) is not convinced that teachers use learning outcomes as purposefully in designing the learning activities and assessment as suggested by the constructive alignment model. He emphasises that the whole concept of learning outcomes, with constructive alignment at its core, cannot be implemented when the links from outcomes to assessment via learning activities are incomplete and when the teachers are not efficient in reaching the student in meaningful and constructive ways. He explained that "There is an adaption of learning outcomes, but it appears to be superficial and irrelevant to Biggs'

intention" (Hadjianastasis, 2017, p. 2261). Biggs on the contrary sees that "Good teaching is getting most students to use the higher cognitive level processes" (Biggs, 2012, p. 41). He argues that higher cognitive processes lead to higher levels of engagement and deeper approaches to learning. Using deeper approaches to learning, on the other hand, means that students are active participants in the process of learning who use higher level activities for learning. Instead of memorising facts, they analyse and solve problems critically, constructively and create new meaning and knowledge (Biggs, 2012). However, this assumption is not confirmed by the results of Gijbels and colleagues (2008) who found that a constructivist learning environment did not necessarily change students' approaches to learning towards a deeper approach. Meyers and Nulty (2009) even argue that despite the focus on student learning, constructive alignment may neglect the students' freedom of thought, because teachers are in a powerful position to design learning processes and thereby influence student approaches to learning. These contradictory results emphasise the complexity of implementing the constructive alignment model in practice and show that there is a gap in the literature which would reveal how the design of learning outcomes and the constructive alignment principles are affecting student achievement of learning outcomes. Since the importance of learning outcomes design has been emphasised by many authors (Biggs, 2014; Kennedy, Hyland, & Ryan, 2009; Cedefop, 2017), the following subchapter will elaborate on the design of learning outcomes, which is based on Bloom's Taxonomy.

1.2.2. Design of learning outcomes

According to the constructive alignment framework the essence of designing learning outcomes is defined by the verbs that describe what students are ought to be able to do or know as a result of learning. Those verbs outline and give directions to learning and teaching, as well as, to the assessment tasks (Biggs, 2014). In agreement, Spady (1994) adds that the verbs used in learning outcomes demonstrate how well teachers have managed to design a learning process.

Although, there are several models that are useful for designing learning outcomes e.g. SOLO taxonomy (Biggs & Tang, 2011), taxonomy of significant learning (Fink, 2013) and others, this study uses Bloom's Taxonomy of cognitive demand (henceforth Bloom's Taxonomy). Bloom's Taxonomy is one of the most widely used and suggested frameworks for designing learning outcomes in the Bologna Process (Booker, 2007; Kennedy, 2006) and in Estonian higher education. Since the implementation of outcome-based education in Estonia, most of the teacher training and materials for teachers in designing outcome-based learning process focus on using Bloom's Taxonomy. As the understanding of students learning has evolved over time, a revised version of Bloom's Taxonomy has been developed by Krathwohl (2002). The revised version of Bloom's Taxonomy is used in this study. It allows to classify the verbs in learning outcomes into six levels of cognitive demand (Krathwohl, 2002). According to Bloom's Taxonomy the hierarchically growing levels of cognitive demand are 1) Remember, 2) Understand, 3) Apply, 4) Analyse, 5) Evaluate and 6) Create, which is the highest (Krathwohl, 2002; Figure 2). The

three highest of the levels (e.g. Analyse, Evaluate, Create) represent thinking skills that are considered most valuable by the labour market (Redeker et al., 2012).

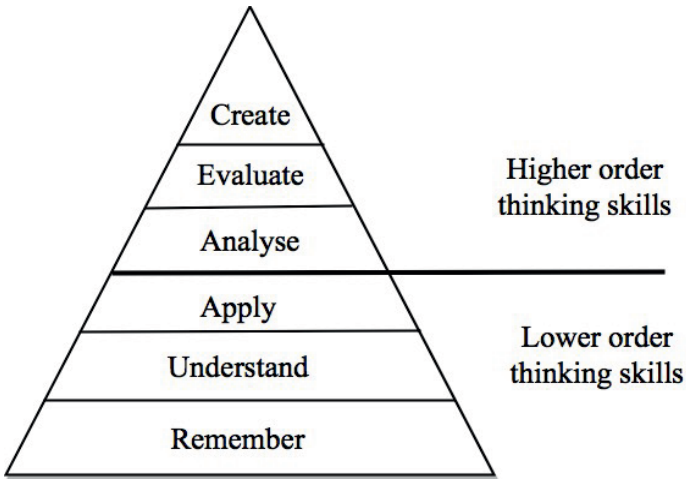

Figure 2. Revised version of Bloom's Taxonomy of cognitive demand. Adapted from Krathwohl (2002).

As learning outcomes are the foundation for designing a learning process (Biggs, 2014) it has been emphasised that learning outcomes should be designed with a focus on higher order thinking skills (Bloom, 1978; Kennedy, Hyland, & Ryan, 2009). Learning outcomes should challenge students to become intrinsically motivated learners (Biggs & Tang, 2011) and engage students in the management of their own learning process (Leach, Zepke, & Butler, 2014). Higher order thinking skills (e.g. critical and creative thinking, problem solving and analysing skills) help students to become autonomous and active lifelong learners and therefore increases their chances of successfully maintaining and improving their employability by meeting the needs of the labour market (Marquis, Radan, & Liu, 2017).

However, several studies have revealed that students' learning may be obstructed when learning outcomes are designed in a narrow spectrum (Brooks et al., 2014). Students tend to dislike a course design which is presented as list of topics that need to be memorised (Kyndt, Berghmans, Dochy, & Bulckens, 2014). Despite research showing the benefits of designing learning outcomes at higher order levels of cognitive demand, it is still found that higher order thinking skills are rarely demonstrated in learning outcomes. For example, Momsen, Long, Wyse, and Ebert-May (2010) show that all the analysed assessment items in their study targeted lower levels of thinking. In another study, Marquis, Radan and Liu (2017) analysed 1184 course unit outlines to find whether these consisted of higher order thinking skill such as creativity (See Figure 2). Their results showed that only 16% of the total course unit outlines consisted of information about creativity skills. These results are concerning since the capability to create is an important and necessary skill for being

able to face the vast developments in technology and in the economy (OECD, 2018; Redeker et al., 2012).

1.2.3. Teachers competencies in designing learning outcomes

Teachers influence the way students approach their learning tasks (Biggs & Tang, 2011; Prosser & Trigwell, 1999). Good course design, teaching activities, and assessment as well as by developing appropriate motivation, it is possible to inspire students to work long hours to achieve high-quality learning outcomes (Kember, 2004). Brophy (2013) adds to this discussion by emphasising that in order to maintain student motivation and engagement, students should constantly be challenged with tasks that include skills and knowledge beyond their current level of mastery. Moreover, Biggs (2014) and others (Schaufeli, Salanova, González-Romá, & Bakker, 2002) have noted that students' achievement of learning outcomes result from their engagement in learning activities. According to Krause (2005) teachers need to create and maintain a stimulating intellectual environment, value academic work and high standards, ensure expectations are explicit and responsive, foster social connections, provide targeted self-management strategies, and use assessment to encourage student engagement and achievement of learning outcomes. Stes and colleagues (2012) add, that an elaborate format of teaching which focuses on students' actual needs, is recommended to engage students in their learning. If students are provided support and feedback throughout from the beginning of their studies and given opportunities to practice higher level thinking skills, then higher order stimulation has the potential to positively impact student study habits, engagement and lead to meaningful learning (Momsen et al., 2010). Hence, designing learning outcomes that would lead to higher order thinking abilities rely on the skills and knowledge of teachers (Lim & Morris, 2009). The task of the teacher is to use their knowledge and experience to interpret standards, policies, regulations and institutional aims to design the appropriate process of learning by defining the expectations of learning with the help of learning outcomes (Cedefop, 2017).

However, research has shown that teachers tend to take learning outcomes as an accountability tool rather than as an approach, which would help in designing an engaging learning process (Hussey & Smith, 2008). There is evidence that teachers design learning outcomes without focusing much on what effect these learning outcomes might have to students' learning (Hadjianastasis, 2017). At the same time teachers have claimed to be under pressure to develop standardised, high level and measurable learning outcomes that they think are relevant or useful in teaching (Sweetman, 2018). Scott (2011) argues that it is difficult to believe that learning outcomes support students to be at the heart of what is learnt and how it is learnt, because learning outcomes, teaching and assessment methods are predetermined by the teachers, which leaves students without the opportunities to control their learning and co-create and choose flexible learning paths. There is also a danger that learning outcomes are only being used as tools in the managerial and quality assessment processes rather than helping teachers to supporting students to become autonomous learners (Maher, 2004). Moreover, as the student population is growing and getting

more diverse by nature, it is questionable if the learning outcomes designed in one particular format, would in fact be suitable for all (Harvey & Kamvounias, 2008). Although outcome-based education is extensively practiced and acknowledged the research has also shown that most of the difficulties in implementing outcome-based education lie in the teachers' ability to implement learning outcomes into their teaching and learning actions (Barman, Bolander-Laksov, & Silén, 2014; Morcke, Dornan, & Eika, 2013). Moreover, imprecisely worded learning outcomes might lead students and teachers into non – desired or inadequate learning paths and/or unachieved learning outcomes (Brooks, et al., 2014; Hadjianastasis, 2017).

Since higher education institutions have been traditional for a long time and teachers are used to a role of a knowledge transmitter, it is evident that the changes in thinking about teaching and learning take time. Adopting the concept of learning outcomes involves a culture shift (Cedefop, 2009). According to Entwistle (1988) if higher education institutions want to change student and teacher ways of learning and thinking, these changes are only likely to be effective if the whole learning environment is also changed simultaneously. This helps to ensure that the recommended ways of studying are perceived by students and teachers as necessary (Entwistle, 1988). However, the top-down approach on the level of regulations might not do the work in the desired ways because teachers may not be familiar with or lack the experience of practicing a student-centred approach (Cedefop, 2017). This is well illustrated by the work of Trigwell and Prosser (1999) who found that university teachers' approach to their teaching is associated with their students' approach to their learning and, furthermore, that the teachers' approach to their teaching is connected with the quality of students' learning outcomes. Similarly, a study by Uiboleht and colleagues (2018) showed that teachers' approaches to teaching and students' learning outcomes are related. They found that students' learning outcomes and approaches to learning were of a slightly higher quality when teachers used a consonant learning-focused approach to teaching (Uiboleht, Karm, & Postareff, 2018).These results further support the assumption that before teachers are able to facilitate student-centred learning and student autonomy, they ought to master the skills of an autonomous and active learner themselves (Donche & Van Petegem, 2011). In order to do that, teachers need a support system in addition to standards and regulations that would help them to change their ways of thinking about learning and teaching (Struyven, Dochy, & Janssens, 2010). Although Bloom's Taxonomy and constructive alignment may offer simple models for designing students learning experiences based on learning outcomes, one cannot succeed in implementing these models without changing the ways of thinking and truly understanding the factors that affect student learning and achievement of learning outcomes.

Even though teachers are considered as the key agents in designing student-centred learning environments (Morcke, Dornan, & Eika, 2013), becoming active and autonomous in learning sets new responsibilities for both teachers as well as students. It has been emphasised that the concept of joint responsibility for learning is the key

that enables teachers and students to redefine traditional roles and boundaries (McCabe & O'Connor, 2014). However, research shows that the changes in teacher and student responsibilities do not come easily and despite the efforts, a teacher-centred traditional approach has dominated the student-centred approach in higher education (Nygaard & Holtham, 2008; Postareff & Lindblom-Ylänne, 2008). Although learning outcomes are believed to enhance the changes in the teaching and learning paradigm (Adam, 2008; Cedefop, 2017) and direct students in becoming active and autonomous learners (Barr & Tagg, 1995; Biggs & Tang, 2011; Huba & Freed, 2000), the evidence that would reveal student learning experiences in outcome-based education and aspects in the learning process which are affecting student achievement of learning outcomes, is scarce. For understanding the impact of the implementation of outcome-based education, it is important to investigate how teachers are designing learning outcomes and which aspects in the learning process are affecting student achievement at the course unit level.

1.3. AIM AND RESEARCH QUESTIONS

In finding out how the implemented outcome-based education influences student learning experiences in achieving the learning outcomes. **The aim of the dissertation is to explore how the design of learning outcomes, the aspects of the learning process and student factors support students' achievement of learning outcomes.**

Specifically, the dissertation had following research questions (henceforth RQ):

1. Which aspects of the learning process and student factors support student achievement of course unit learning outcomes according to student perceptions? **(Article I)**;
2. Which aspects of the learning process and student factors support student achievement of course unit learning outcomes according to teacher perceptions? **(Article II)**;
3. Which aspects of the learning process and student factors explain student engagement in achieving the course unit learning outcomes? **(Article II)**;
4. How are course unit learning outcomes designed according to Bloom's Taxonomy of cognitive demand and their achievement perceived by students? **(Article III)**;
5. Does the design of learning outcomes relate to student perceptions of the achievement of course unit learning outcomes, motivation, engagement and satisfaction? **(Article III)**.

2. RESEARCH DESIGN AND METHODS

The following chapters provide an overview of the research design and methods used in this dissertation. Firstly, research design is explained. Then the sample and the instrument are described. This is followed by the procedure of data collection, ethical considerations and data analysis strategies.

2.1. OVERVIEW OF THE RESEARCH DESIGN AND STUDY

This dissertation consists of one mixed methods study. Although mixed methods provide various design options (Creswell, Plano Clark, Gutmann, & Hanson, 2003), a triangulation design of mixed methods is used in the current study to explore the aspects that support students in achieving the learning outcomes from different, but complementary perspectives (Creswell & Plano Clark, 2010). The triangulation design of mixed methods is valuable in the current context, since it enables to compare, validate and expand the quantitative results with qualitative findings (Creswell & Plano Clark, 2010). Specifically, a quantitative approach was used to determine the aspects of learning process and student factors that support students to achieve the learning outcomes according to Estonian students, Australian students, and Estonian teacher perceptions (see Figure 3). On the one hand, the triangulation of different participant groups was used, because learning outcomes in Estonian higher education are fairly new and not sufficiently investigated (Article I and II). To achieve a deeper understanding of student learning in outcome-based education and of the aspects that impact their achievement of learning outcomes, both students and teachers in Estonia were surveyed (Article II). On the other hand, triangulation was used in understanding the wider context and creating a coherent bigger picture – Estonian student perceptions are compared to those of Australian students, whose higher education setting has been outcome-based for a longer period of time (Article I). In order to triangulate different parties' perceptions, the same survey instrument (eVALUate) was used among all participants (a more detailed description is found in the instrument sub-chapter).

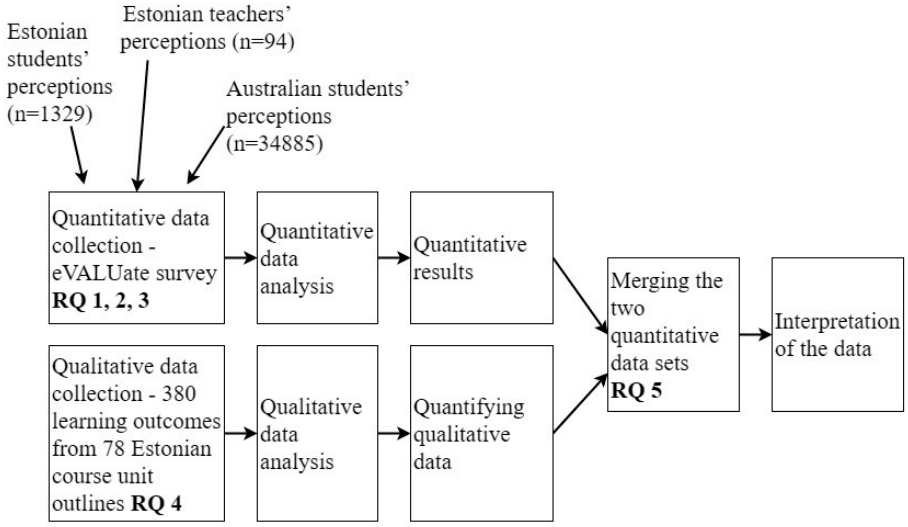

Figure 3. Research design and connections to the research questions. Compiled by the author based on the triangulation design: data transformation model by Creswell and Plano Clark (2010).

Since learning outcomes are at the centre of this study a qualitative approach was used to analyse learning outcomes from the 78 course unit outlines based on Bloom's Taxonomy of cognitive demand. As the majority of Estonian higher education teachers were trained to design learning outcomes based on Bloom's Taxonomy, a revised version (Krathwohl, 2002) of Bloom's Taxonomy was used in this study to analyse learning outcomes. However, to empower the findings from a survey by merging the quantitative and qualitative data sets, a data transformation model of mixed methods by Creswell and colleagues (2003) was used in designing this study (See Figure 3). This model allows the data to be mixed during the analysis stage and facilitates further analysis of the two data sets. The qualitative data about learning outcomes was quantified to determine the relationships between the design of learning outcomes and students' perceptions of their motivation, engagement, satisfaction and achievement of learning outcomes (Article III). Table 1 provides an overview of the study, its research questions, details of the participants, used methods, data collection instruments, data analysis methods for each research question and main results.

Table 1. Overview of the study

Title of the article	Used methods, Data collection, Data analysis	Participants and data sources	Main results
RQ 1. Which aspects of the learning process and student factors support student achievement of course unit learning outcomes according to student perceptions?			
Validation of a unit evaluation survey for capturing student perceptions of teaching and learning: A comparison among Australian and Estonian higher education students. (Article I)	Quantitative research. eVALUate survey (all 11 items). RQ 1. Aggregated percentage agreement analysis.	Estonian (n=1329) and Australian student (n=34885) perceptions.	RQ 1. According to Estonian and Australian student perceptions the aspects of the learning process and student factors support student achievement of learning outcomes. However, approximately 30% of Estonian students reported not to be engaged with their studies and 21% of Australian students perceived that feedback did not support them to achieve learning outcomes.
RQ 2. Which aspects of the learning process and student factors support student achievement of course unit learning outcomes according to teacher perceptions? RQ 3. Which aspects of the learning process and student factors explain student engagement in achieving the course unit learning outcomes?			
Väljundipõhine õpe – kas õppimisse panustava ja kaasatud üliõpilase kujundaja? [*Learning in outcome-based education – does it lead to student engagement?*]. (Article II)	Quantitative research, eVALUate survey (all 11 items). RQ 2. Aggregated percentage agreement analysis. RQ 3. Regression analysis to determine the variables that predict student engagement. Mann-Whitney U-test to determine the statistically significant differences of students' and teachers' answers.	Estonian student (n=1329) and teacher (n=94) perceptions.	RQ 2. According to Estonian teacher perceptions the aspects of the learning process and student factors support student achievement of learning outcomes. However, approximately 30% of teachers reported that students are not engaged with their studies RQ 3. Student and teacher responses were statistically different with the assessment alignment, motivation and satisfaction items. Student engagement is explained by workload, experiences in study formats, engagement (i.e. effective learning, best use of learning possibilities), motivation and satisfaction.

RQ 4. How are course unit learning outcomes designed according to Bloom's Taxonomy of cognitive demand and their achievement perceived by students? RQ 5. Does the design of learning outcomes relate to student perceptions of the achievement of course unit learning outcomes, motivation, engagement and satisfaction?			
Does the design of learning outcomes matter from the students' perspective? (Article III)	RQ 4. Qualitative research, course unit outlines, content analysis based on Bloom's Taxonomy. RQ 5. Quantitative research, eVALUate survey (items 8-11: motivation, engagement, satisfaction). Aggregated percentage agreement to determine student perceptions to the achievement of the learning outcomes. Pearson Chi Square Goodness of Fit test to determine the association between learning outcome levels and student perceptions of their achievement of learning outcomes, motivation, engagement and satisfaction. Odds ratios to understand the effect size of the associations to the levels of learning outcomes.	Learning outcomes (n=380) from 78 course unit outlines and Estonian student (n=1329) perceptions.	RQ 4. According to Bloom's Taxonomy 85% of learning outcomes were designed at the three lowest levels of cognitive demand (Remembering, Understanding, Applying) and none at the highest level of cognitive demand (Creating). The majority of students' perceptions revealed that they achieved the course unit learning outcomes. RQ 5. The design of the learning outcomes relates to how students perceive their achievement of learning outcomes, motivation, engagement (i.e. effective learning), and satisfaction. Students were more likely to be satisfied, engaged with their studies and motivated to achieve the learning outcomes, which were designed at the higher order of cognitive demand.

2.2. PARTICIPANTS

For developing a broader understanding of how outcome-based education in Estonia supports students' learning experiences in achieving the course unit learning outcomes, it was decided to include as many higher education institutions in the sample as possible. As a result, eight faculties from six Estonian higher education institutions agreed to participate in the study. The faculty heads/responsible administrators were asked to provide a targeted sample of bachelor level course units based on the following criteria:

1. course units with large (>50) and small (<50) enrolments;
2. internal and external modes of study forms;
3. area of study (courses from different faculties); and
4. generic and specialty course units.

In total, the Estonian sample consisted of 78 course units, 1329 students and 94 teachers who studied or taught within the 78 course units. Students and teachers provided feedback to students learning experiences using eVALUate student evaluation survey. The Estonian students' average age was 25 years (SD=7,9; range 18-52 years). The student population of this study is representative to the student population in the studied fields (Article III; Haridussilm, 2018). Also 83% of the respondents were female students, who indicated that they had participated in most or all of the lectures in the studied course units. The teachers' average age was 45 years (SD=12,2; range 25-71 years).

In addition, detailed data of 380 learning outcomes within the 78 course units was gathered. Course unit outlines were used as source documents since they provided significant information on how learning outcomes were designed for educational practices and offered a snapshot of what teachers regarded as essential for their students to learn (Marquis, Radan, & Liu, 2017). The characteristics of the Estonian sample are shown in Table 2.

Furthermore, the study consisted of comparative data from 1067 course units and 34885 student responses from one Australian university (Article I). The Australian students were included in the study for benchmarking purposes and are used as supportive data for emphasising the Estonian student responses. The Australian student sample is not in the focus of this study and is used only for responding to the first research question. Cooperation with the Australian researchers, who developed the student evaluation survey eVALUate, helped to ensure that the survey instrument is reliable and usable in an Estonian context. A comparison of student perceptions in different countries provides insight into those factors that contribute to successful student learning in outcome-based learning environments.

Table 2. The characteristics of the Estonian sample

Institution	Field of study	Number of course units	Number of learning outcomes	Number of students	Number of teachers
Institution 1	Service	7	28	86	6
Institution 2	Social Sciences, Business and Law	13	84	224	7
Institution 3	Health and Wellbeing	8	33	111	5
Institution 4	Health and Wellbeing	33	152	575	62
Institution 5	Social Sciences, Business and Law	8	43	240	9
Institution 6	Humanities and Arts	9	40	93	5
Total number		78	380	1329	94

Note. The Field of Study was categorised according to the *Estonian Research Portal, 2013.*

2.3. INSTRUMENT

The eVALUate student evaluation survey was used in this study to investigate students' and teachers' perceptions about aspects of the learning process and student factors which support student achievement of learning outcomes. eVALUate is a validated mixed method course unit survey that has been developed for systematically improving the internal quality of higher education institutions (Oliver, Tucker, Gupta, & Yeo, 2008). eVALUate aims to capture student perceptions of what supports them in achieving the learning outcomes, what students bring to learning in terms of their motivation and engagement, how satisfied are students with the studied course unit, and how the course unit might be improved (Oliver et al., 2008; Article I). The instrument was chosen for this study as a result of an extensive search for instruments which are valid and measure student achievement of learning outcomes in the context of teaching and learning process (Article I).

The eVALUate student evaluation survey was modified and adapted to the Estonian higher education context to understand how outcome-based education has been implemented in Estonian higher education institutions at the course unit level. The full validation process of the modified eVALUate student survey is described in detail in Article I. The modified eVALUate survey consists of 14 items – 11 quantitative items[1] (see Figure 4) and 3 qualitative items. For the quantitative items a 5-point rating scale (strongly agree, agree, disagree, strongly disagree and unable to judge) was used. The qualitative items consisted of three open-ended questions about the aspects which

[1] The original eVALUate instrument consists of 11 quantitative items. In the adaptation process to the Estonian context one item "Assessment tasks" was divided into two items (Assessment-a, Assessment -b) to capture the learning activities under the theme of assessment (see Article I).

support and hinder students in achieving the course unit learning outcomes and what could be improved. In addition to the 14 survey items, the participants were asked to evaluate how they think students had achieved each of the learning outcomes described in the studied course unit outlines on a 5-point rating scale (achieved fully, achieved mostly, achieved minimally, did not achieve, unable to judge).

This study focuses on the quantitative data collected with the modified eVALUate survey instrument. Based on the examples of previous studies (Biggs, 2014; Biggs and Tang, 2011; Oliver et al., 2008) the studied 11 eVALUate items were categorised as 1) the aspects of the learning process and 2) student factors (see Table 3; Figure 4). The eVALUate survey items i.e. the statements used in the instrument that the participants had to decide upon to what degree they agree with a statement, are presented in Table 3 alongside with the abbreviations of those statements, which are used in Figure 4 as well as in the following discussion.

Table 3. eVALUate survey items and their abbreviations. Compiled by the author based on Oliver and colleagues (2008).

	Items	The presented statements	Abbreviations
Aspects of the learning process	1.	The learning outcomes in this unit are clearly identified	Clear learning outcomes
	2.	The learning experiences in this unit help me to achieve the learning outcomes	Experiences in study formats
	3.	Learning resources in this unit help me to achieve the learning outcomes	Learning resources
	4a.	The tasks completed during this unit help me to achieve the learning outcomes	Assessment during course unit
	4b.	The tasks given by the teacher evaluate my achievement of learning outcomes	Assessment alignment
	5.	Teacher's feedback on my work in this unit helps me to achieve the learning outcomes	Feedback
	6.	The workload in this unit is sufficient to the achievement of learning outcomes	Workload
	7.	Teaching in this unit helps me to achieve the learning outcomes	Teaching activities
Student factors	8.	I was motivated to achieve learning outcomes in this unit	Motivation
	9.	I prepare for the lectures and seminars in order to take the maximum use out of these	Engagement: best use of learning possibilities
	10.	I thought about how to learn more effectively in this unit	Engagement: effective learning
	11.	Overall, I am satisfied with this unit	Satisfaction

Detailed information about the eVALUate items can be found in Article I. In interpreting the results, it is relevant to keep in mind that the eVALUate instrument consists of one single item per theme. For example, it consists of one motivation item, one teaching activities item and one feedback item.

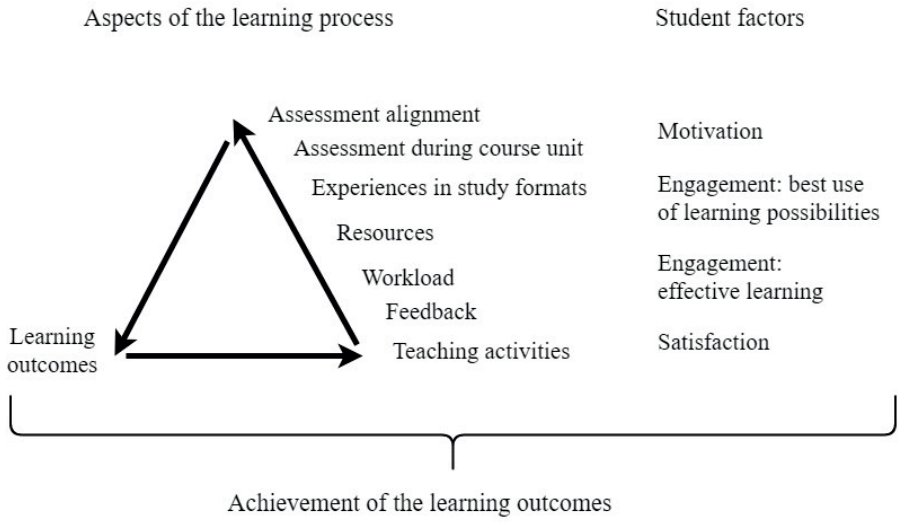

Figure 4. eVALUate student survey items compiled by the author based on the model of constructive alignment by Biggs and Tang (2011) (see Figure 1).

In addition, the eVALUate developers have set a standard to interpret the data collected with the eVALUate survey. Where the aggregated percentage agreement is lower than 80% for an item, it is considered not acceptable and warrants further investigation (Tucker, Halloran, & Price, 2013). The standard was set based on several aspects including the results of piloting (Oliver et al., 2008), a discussion between the university and stakeholders (Tucker et al., 2015); the research by Morley (2013); and according to B. Tucker based on the results of large scale longitudinal student satisfaction surveys such as the Student Experience Survey (SES), the Student Engagement Survey (AUSSE) in Australia, and the National Survey of Student Engagement (NSSE) in USA (personal communication, November 26, 2018). In this study, the 80% principle is also used in interpreting the results.

2.4. DATA COLLECTION PROCEDURE

The data for this study was gathered in the autumn semester of 2012/2013. The eVALUate survey was used to gather data from students and teachers at the end of each course unit. The eVALUate survey was conducted for three weeks and during that time reminders were sent to non-responders. The respondents were informed that their feedback was anonymous and that the results would be reported in an aggregated

form. Participants gave feedback on their experiences on a voluntary basis and submission of the survey indicated their informed consent. The data about learning outcomes from course unit outlines was gathered before conducting the eVALUate survey. The course unit outlines were available in each of the participating higher education institution webpage.

2.5. ETHICAL CONSIDERATIONS

All the participants were informed of the purpose of the research, that their feedback was anonymous and that the results would only be reported in an aggregated form. The participation was voluntary, and the data was de-identified prior to data analysis. Prior to sending out the invitation emails to the participants the ethical and administrative issues were discussed thoroughly in each institution and an agreement to conduct the research was settled. In the case of the data from the Australian university, ethics approval was granted following the university and government laws to the co-author of the Article I.

2.6. DATA ANALYSIS STRATEGIES

The analysis of this mixed method research is based on the data gathered with the adapted eVALUate survey and the descriptive learning outcomes data gathered from the course unit outlines. The data analysis was divided into three phases, where the focus of each phase proceeds the results of the previous one. Specifically, to explain the results of phase I (student factors and aspects of the learning process which support student achievement of course unit learning outcomes), research focus and analysis strategies for phases II and III were developed. Such data analysis follows the example of Oliver et al. (2008), who emphasised that the aspects of the learning process and student factors, where the percentage agreement is reported less than 80% for an item, warrant further research. Detailed descriptions of each study phase and used analysis strategies are presented in Articles I, II and III.

Phase I. Since outcome-based education is fairly new in Estonian higher education and there is little information on student learning experiences and achievement of the learning outcomes, the aim of phase I was to comparatively explore Estonian and Australian student perceptions about their learning experiences in outcome-based education (RQ 1). Therefore, the aspects of the learning process and student factors which support their achievement of the course unit learning outcomes were determined. Phase I of this study consisted of quantitative data analysis (aggregated percentage agreement calculation) of Estonian (n=1329) and Australian student (n=34885) perceptions to the eVALUate student survey items.

Phase II. The aim of phase II was to expand the knowledge of student learning experiences of outcome-based education in an Estonian higher education context by revealing the aspects of the learning process and student factors that support student achievement of the learning outcomes based on the teachers' experiences (RQ 2).

Phase II of this study included quantitative data analysis, where first aggregated percentage agreements were calculated to determine Estonian student (n=1329) and teacher (n=94) perceptions to the aspects of the learning process and student factors which support their achievement of the course unit learning outcomes. In this analysis all eVALUate items were measured. Then, in order to explain the lower aggregated percentage agreements of student engagement items which emerged from the analysis of teacher and student perceptions, four regression models were developed using the Backward method (RQ 3). For developing the regression models, first, engagement (i.e. best use of learning possibilities) was treated as dependent variable and all the other 11 items from the eVALUate survey were treated as independent variables. Then, the same procedure of analsys was followed when using the engagement (i.e. effective learning) as dependent variable and all the other 11 items of eVALUate as independent variables. The two regression models of engagement items were developed separately with samples of teachers and students. Additionally, to find out whether the observed differences between student and teacher perceptions were statistically significant, a non-parametric Mann-Whitney U-test was performed.

Phase III. Since learning outcomes ought to guide students learning (Biggs & Tang, 2011) and lower engagement perceptions were determined in phases I and II, the aim of phase III was to explore in detail how the design of learning outcomes is related to student (n=1329) perceptions about their achievement of the learning outcomes, their motivation, engagement and satisfaction within the studied course units. First aggregated percentage agreement calculations to the eVALUate items determined in phase I – namely motivation, engagement (i.e. best use of learning possibilities and effective learning) and satisfaction were included in the analysis. Then, aggregated percentage agreements were calculated to determine student perceptions about their achievement of the learning outcomes (RQ 4). Subsequently, learning outcomes (n=380) from the course unit outlines (n=78) were analysed qualitatively. Specifically, a deductive approach of content analysis was used to classify the learning outcomes in course unit outlines according to the revised Bloom's Taxonomy (Krathwohl, 2002) into six levels (1st level - Remember, ... 6th level - Create) (RQ 4). The content analysis was based on the verbs from each learning outcome, which were coded according to the classification of verbs described in Bloom's Taxonomy. The detailed description of the content analysis of the learning outcomes is described in Article III. Then, each course units learning outcomes were quantified based on the highest level of the stated individual learning outcome to expand the data analysis and explore the relationships between the learning outcomes design and student perceptions (RQ 5). Pearson Chi Square Goodness of Fit test was conducted to determine the association between learning outcome levels (the design) and student perceptions of their achievement of the learning outcomes, their motivation, engagement and satisfaction with the course unit. Next, Odds ratios were calculated to understand the effect size of the associations to the levels of learning outcomes.

3. RESULTS AND DISCUSSION

In the current chapter the results and discussion are presented together. The results of the study are presented at the beginning of each sub-chapter, which are then subsequently followed by the discussion points. Firstly, Estonian and Australian student and then Estonian teacher perceptions about the factors that support students learning in outcome-based education are presented and discussed together (RQ 1 and 2, articles I and II). Secondly, the aspects, which explain the low engagement perception results are presented and discussed (RQ 3, article II). Consecutively the results of how learning outcomes are designed based on Bloom's Taxonomy (RQ 4, article III) and how the design of the learning outcomes, student achievement of the learning outcomes, student motivation, engagement and satisfaction are related (RQ 5, article III). At the end of this chapter the sub-chapters of practical implications, limitations and further directions are presented.

3.1. ASPECTS OF THE LEARNING PROCESS AND STUDENT FACTORS SUPPORTING STUDENT ACHIEVEMENT OF LEARNING OUTCOMES

Understanding which factors support student achievement of the learning outcomes is relevant for teachers in implementing outcome-based education and in transforming the paradigm of traditional teaching towards student-centred learning (Biggs & Tang, 2011). Therefore, this study aimed to determine the aspects of the learning process and student factors, which support student achievement of learning outcomes (Article I, II).

The results demonstrated that all the aspects of the learning process and student factors from the eVALUate instrument support student achievement of learning outcomes (see Table 4). The reported percentage agreement among most of the aspects of the learning process and student factors was at a high level (80% and above). However, Australian students demonstrated lower agreement to the feedback item, where 21% of students felt that feedback did not support them in achieving the learning outcomes. Alarmingly, approximately 30% of Estonian teachers perceived that their students were not engaged to make the best use of their learning experiences and did not think about how they could have learned more effectively in the studied course unit. Similarly, approximately 26% of the Estonian students perceived not to make the best use of their learning possibilities and 30% of students had not thought about how to learn more effectively. In addition, it was found that Estonian student and teacher perceptions were similar, except with the assessment alignment, motivation and satisfaction items, where the responses were statistically different.

The results from the Estonian sample are worrying. Especially, since the aim of outcome-based education is to support the implementation of student-centred learning – the development of active and autonomous learners, who have the skills and knowledge that respond to the needs of today's and future societies (Biggs & Tang, 2011; Theobald, Windsor, & Forster, 2018). If students are not engaged with

their learning, then the question is, what has changed in higher education since the implementation of outcome-based education?

Table 4. Aspects of the learning process and student factors supporting student achievement of learning outcomes

	Aspects of the learning process								Student factors			
	Learning outcomes %	Experiences in study formats %	Resources %	Assessment alignment %	Assessment during course unit %	Feedback %	Workload %	Teaching activities %	Motivation %	Engagement: best use of learning possibilities %	Engagement: effective learning %	Satisfaction %
Estonian students	90.1	90.9	90.2	90.4	88.0	81.9	85.9	89.2	86.5	**76.0**	**71.6**	86.9
Estonian teachers	94.7	93.6	96.8	95.7	92.6	91.5	89.8	95.7	91.5	**69.2**	**71.3**	83.0
Australian students	88.5	85.0	84.9	85.0	0	**79.1**	85.9	84.1	84.8	85.8	84.7	83.8

Note. Percentage agreement less than 80% is highlighted in bold to indicate that the item is lower than what is considered acceptable (Tucker, Halloran, & Price, 2013).

It was concerning to find out that one third of Estonian students were not engaged with their studies. These results imply that students perceive their role in the process as a passive learner, not the expected active autonomous learner. The findings are similar to those of Zerihun, Beishuizen and Van Os (2011), who found that students in outcome-based education perceived their role as passive learners. It has been claimed that the lack of engagement is reflected in students' lack of attendance, preparation for classroom activities and greater reliance on teachers for knowledge acquisition (Baron & Corbin, 2012). Disengagement is likely linked to students' competing life priorities, expectations as well as to socio-political influences at universities that support students in becoming passive knowledge consumers rather than active participants (Kahu, 2013; Kahu, Nelson, & Picton, 2017). This might be

the case in Estonia, since previous research confirms that students prefer passive participation in lectures (Pilli et al., 2013; Roosalu et al., 2013). According to Lea and colleagues (2003) students' passive participation can be expected if the change towards student-centred learning has not been implemented, and students have not had the opportunity to develop the skills of how to become an active and autonomous learner. The issue of undergraduate students becoming less engaged and lacking the will or skills to engage with their studies is not new and is addressed widely by other researchers (Postareff & Lindblom-Ylänne, 2008; Roosalu et al., 2013; Udam, Seema, & Mattisen, 2015; Vadi, Reino, & Aidla, 2014). It is generally agreed that disengagement with studies is detrimental to students' learning outcomes and in the longer term to the viability of higher education programmes (Kuh, 2009; Rytkönen et al., 2012; Salamonson, Everett, Koch, Wilson, & Davidson, 2009).

In the context of the versatile and massificated state of higher education it can be argued that students' lack of engagement in Estonia may refer to several causes. For example, the students who reported not to be engaged with their studies were either bored and/or unchallenged in the lectures (Roosalu et al., 2013). It can also be suggested that the students might not have the relevant skills, metacognitive awareness or a habit of satisfying one's intellectual hunger – all of which facilitate students' abilities to engage with their studies and to actively construct their knowledge. Estonian students might be used to learning by memorising what the teacher tells them to – the habit to learn traditionally (Spady, 1994; Cedefop, 2009). Neither is it given that teachers provide students the opportunity to be active and autonomous learners. Roosalu and colleagues (2013) found that most Estonian students believe they have not had enough opportunities to take responsibility for their learning and choose the tasks that interest them (Roosalu et al., 2013). Additionally, Estonian students' high employment rate (60% and above) might be one of the reasons why students are not engaged with their studies (Kirss et al., 2011).

These findings are in accordance with previous research (Rytkönen et al., 2012; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008) and emphasise a stronger need for supporting students in developing skills on how to become autonomous learners. Hence, support mechanisms and training courses should be developed and made available also for teachers, so that they could design learning environments where students could practice the skills of an autonomous learner (Biggs & Tang, 2011). Unlike in the past, today's learning environments should enable students to take greater responsibility and offer more opportunities to make conscious choices. The learning process should be flexible so that the students can choose alternatives, which support their learning, since autonomous learners are ready to contribute more (Brooks et al., 2014). More responsibility in students' learning activities engages students and allows them to value the time that they are investing into their learning (Kuh et al., 2008). Kahu (2013) suggests that it is important to increase students' knowledge of different variables which affect their engagement and which students themselves can control.

Differently from the Estonian sample, the Australian students perceived that feedback was the least supportive aspect for the achievement of learning outcomes. These

results can be interpreted as either the lack of feedback or the presence of general non-specific feedback for around 21% of Australian students, who did not find feedback useful in achieving the learning outcomes. However, teacher feedback is crucial for supporting students' learning. It has been proven that clear and timely feedback which is related to the assessment tasks could improve students learning and achievement of learning outcomes (Tucker, Halloran, & Price, 2013). The study by Zepke, Leach and Butler (2014) might explain the observed results of the Australian sample. They found that teacher feedback in improving students' learning was perceived to be more important to the students than it was for the teachers (Zepke, Leach, & Butler, 2014). Teachers need to value and invest into their role of giving supportive feedback to students, otherwise they may jeopardize the whole concept of student-centred learning (Biggs & Tang, 2011).

Research has demonstrated that there is a significant difference between student and teacher conceptions of teaching and learning. The study of Virtanen and Lindblom-Ylänne (2010) highlighted the important differences between teacher and student perceptions. In this study, teachers evaluated the relevance of assessment alignment in helping students to achieve the learning outcomes significantly higher than students. Students on the other hand, evaluated their motivation to learn much higher than teachers. Moreover, students were more satisfied with the courses than teachers evaluated the courses to be. The difference between student and teacher perceptions might have occurred due to their personal and professional experience and beliefs (Virtanen & Lindblom-Ylänne, 2010). For example, the reasoning for and understanding the alignment behind assessment tasks and learning outcomes might be explicit to teachers since they design the assessment tasks and evaluate them, but for the students these connections might not be as transferable. The same principles could also be followed when interpreting student motivation and satisfaction. The rest of the evaluated items were not statistically different which indicates that students and teachers perceived students learning experiences similarly and confirm that the evaluations to the investigated phenomenon reflects students learning experiences in outcome-based education accurately.

Although, the results of the current study showed that the aspects of the learning process and student factors supported student achievement of the learning outcomes, the Estonian results essentially indicate that student engagement is an important aspect that needs attention when outcome-based education is being implemented.

3.2. ASPECTS OF THE LEARNING PROCESS AND STUDENT FACTORS EXPLAINING STUDENT ENGAGEMENT IN ACHIEVING LEARNING OUTCOMES

To develop a wider understanding of why student engagement was evaluated the lowest (Article I, II), the aspects of the learning process and student factors from the eVALUate survey were analysed to determine which of them explain variance in student engagement items (Article II). Therefore, two regression models were

developed, where in one, the engagement (i.e. best use of learning possibilities) was treated as dependent variable and all the other 11 eVALUate items were treated as independent variables, and in the second one, the engagement (i.e. effective learning) was treated as dependent variable and all the other 11 eVALUate items as independent variables. The models were conducted both with teacher as well as student samples.

According to teachers perceptions the regression model revealed that 66% of variance in student engagement measured by best use of learning possibilities was explained by workload, assessment alignment, experiences in study formats, student motivation, and engagement (i.e. effective learning). Teachers' responses also revealed that 64% of variance in student engagement measured by effective learning was explained by motivation, engagement (i.e. best use of learning possibilities) and satisfaction.

According to the students' responses, 38% of variance in student engagement measured by best use of learning possibilities was explained by workload, student motivation and engagement (i.e. effective learning), and 33% of variance in student engagement measured by effective learning was explained by clear learning outcomes, feedback, resources, teaching, workload, motivation, engagement (i.e. best use of learning possibilities), and satisfaction.

In accordance with the work of Kahu (2013) the main variables explaining student engagement in achieving learning outcomes in this study emphasise that attention should be paid to student motivation, satisfaction, workload, experiences in study formats and engagement itself. According to Kahu (2013) student engagement is a complex phenomenon that warrants investigating to support teachers for better positioning and meeting the needs of students, to enhance the student experience, and to improve the educational outcomes. The results of the current study support the interrelations described in the conceptual framework of engagement, antecedents and consequences developed by Kahu and colleagues (2013, 2017) according to which different dimensions of engagement are dependent on each other and relate to student motivation, satisfaction, workload and preparation for the studies (Kahu, 2013; Kahu, Nelson, & Picton, 2017).

The results of this study also revealed that the variance explained in student engagement differs remarkably between teachers and students. Looking at the results from the perspective of the aspects of the learning process, it appeared that the differences in explained variance may suggest conceptual differences in teachers' and students' understanding of relevant aspects of the learning process. For instance, according to teachers' responses student engagement (i.e. best use of learning possibilities) was explained by workload, assessment alignment and experiences in study formats. Whereas, according to students' responses student engagement (i.e. best use of learning possibilities) was only explained by workload. These results refer that Estonian teachers are aware of the principles of constructive alignment and have therefore coherently applied their knowledge when estimating the role of different aspects of the learning process in their students' learning behaviour. Students' results,

on the other hand, may reflect that students do not think about their learning process similarly to teachers, they are not aware of the principles of constructive alignment and do not consciously elaborate on how the aspects of the learning process might influence their development and achievement of learning outcomes. Students' results might also imply that no one has explained to students of why and how learning process has been designed.

When looking at the aspects which explain student engagement (i.e. effective learning), a different picture emerges. Teachers did not seem to attribute the aspects of the learning process any direct role in how effectively the students were engaged in their learning. These results suggest that while teachers place the responsibility for engagement (i.e. effective learning) on students, students spread the responsibility quite equally between almost all the included variables.

Although, teachers' responses demonstrated to explain more than 60% of variance in student engagement, one must be cautious in interpreting these results, mainly because teachers were evaluating someone else's behaviour – how they perceive student learning experiences based on the knowledge they have. However, one must also be cautious in interpreting student responses, since less than 40% of the variance in their engagement can be explained by the items measured in this study. Hence, it is evident that the various aspects which explain student engagement in outcome-based education warrant further research.

Consequently, it is important that teachers design learning processes which would engage students and respond to their needs. It has been emphasised that in order to do so the aspects of the learning process (e.g. clear learning outcomes, assessment alignment, teaching activities, feedback etc.) need to be coherent as highlighted in the constructive alignment model (Biggs, 2014; Larkin & Richardson, 2013). For supporting student engagement, the knowledge about the factors, which explain student engagement helps teachers to create student-centred learning environments (Biggs, 2014). Hence, it is important that teachers and stakeholders also raise student awareness about the factors, which affect their engagement and encourage them to analyse their learning and give guidance how students themselves can take control over those aspects for becoming more engaged in their learning (Kahn, 2014; Kahu, 2013).

3.3. THE DESIGN AND ACHIEVEMENT OF LEARNING OUTCOMES

According to the constructive alignment principles learning outcomes are the starting point for designing outcome-based education and challenging learning experiences (Biggs, 2014). This study explored how course unit learning outcomes are designed according to Bloom's Taxonomy of cognitive demand and how their achievement is perceived by students (Article III).

The results of this study revealed that based on the levels of Bloom's Taxonomy, 85% of learning outcomes (n=380) in the surveyed course units (n=78) were designed at the three lowest levels of cognitive demand (Remembering, Understanding,

Applying) and surprisingly none at the highest level of cognitive demand (Creating). Accordingly, lower level learning outcomes might be the reason why the majority of student perceptions revealed that they achieved the course unit learning outcomes. These results support previous findings which showed that most of the course unit assessment items according to Bloom's Taxonomy addressed lower cognitive levels (Remembering, Understanding) (Momsen et al., 2010). However, the question is how demanding and educative is the learning process for students, if learning outcomes are only designed at lower levels of cognitive demand? In turn, the lack of challenge could lead to low motivation and loss of interest (Brophy, 2013).

It is important to recognise that the design of learning outcomes, teaching and assessment methods articulate teachers' expectations for students learning in their course units (Biggs, 2014; Momsen et al., 2010). Teachers' lower cognitive level expectations might be a result of various complex issues. The design of course unit learning outcomes reflects the teachers' ways of thinking of their subject matter relative to the levels of cognitive demand which in the current study appeared to be in terms of remembering, understanding and applying. Teachers' knowledge and skills in teaching might also reflect their previous experiences as students (Entwistle, Skinner, Entwistle, & Orr, 2000; Hadjianastasis, 2017), which are commonly traditional in Estonia. It is claimed that the teachers' choices of teaching strategy might be influenced by disciplinary and cultural rules, even social relations, within higher education institutions (Lindblom-Ylänne, Pihlajamäki, & Kotkas, 2006) and sometimes practical reasons such as time constraints (Barman, Bolander-Laksov, & Silén, 2014). Estonian higher education has been traditional for a long time which means that Humboldtian teaching and assessment methods are strongly rooted (Article III). Although, the policies emphasise that the teaching and learning paradigm must change, one must give time and motivation for implementing those changes (Botha, 2002; OECD, 2018). In order to transfer the traditional concepts of teaching and learning towards student-centred learning, teachers first need to develop the skills of higher order cognitive demand (Lim & Morris, 2009), which help them to design challenging learning environments and support students in becoming active and autonomous learners (Donche & Van Petegem, 2011).

There are multiple reasons why teachers continuously tend to carry on with traditional ways of teaching and designing learning outcomes without the conceptual change in the understanding of teaching and learning. Firstly, in most of countries, as in Estonia, outcome-based education has been introduced as a top-down policy aimed for quality assessment purposes and is therefore criticised to be overly bureaucratic in nature (Hussey & Smith, 2008). This drives teachers to diligently design learning outcomes as a tick-a-box assignment communicating and measuring the content of their course unit rather than communicating to students what they are expected to be able to do with the content (Hadjianastasis, 2017). Previous studies in Estonia have shown that teachers tended not to follow the national guidelines in designing learning outcomes, because the guidelines were seen as an administrative formality, not as a conceptual approach to teaching guided by law (Tammets & Pata, 2013). These results illustrate

that teachers tend to take the design of learning outcomes as a formality, a writing task, not as a way of designing student learning experiences in line with constructive alignment principles. Based on South Africa's example, one of the pioneer countries in implementing outcome-based education, it has been argued that the political ideals seldom match classroom activities when there is no shared vision of implementing outcome-based education and when teachers and students are not involved and in agreement with the aimed teaching and learning strategies imposed at the political level (Botha, 2002).

Secondly, learning outcomes designed at lower levels of cognitive demand might be the result of the Estonian national regulations which emphasise that learning outcomes should be formulated at the threshold level (Vabariigi Valitsus, 2016), aiming to reduce the dropout rates and increase the number of students completing their studies within the nominal time. This regulation may have unexpectedly decreased the quality of cognitive involvement and student engagement with their studies and might explain why implementing learning outcomes in Estonia has not had the expected impact on the slightly rising student dropout rates (Haridussilm, 2018). The critics of the learning outcomes movement have indicated that focusing merely on the minimum or threshold level makes the system ineffective (Furedi, 2012), because tight and inflexible learning outcomes do not serve the student, they serve bureaucracy and the need to have semblance of order (Hadjianastasis, 2017).

Contrary to the political agenda for designing learning outcomes at a threshold level, research suggests that for reducing dropout rates, universities should focus on obtaining better cognitive outcomes and achieving higher levels of student satisfaction with their university experience. For obtaining better cognitive outcomes, policies should be aimed at facilitating good levels of practical and methodological knowledge and skills that can serve students when seeking to enter the labour market (Duque, Duque, & Suriñach, 2013). It has been repeatedly claimed that more attention and resources should be invested in increasing the students' transferable learning skills (e.g. analysis of information, effective communication, critical thinking, creating) to encourage greater student integration and involvement in their education (Duque, Duque, & Suriñach, 2013; Redeker et al., 2012). The results of the current study endorse the need to design learning outcomes at higher levels of cognitive demand, which require transferable learning skills relevant for students entering the labour market.

3.4. RELATIONSHIPS BETWEEN THE DESIGN OF LEARNING OUTCOMES AND STUDENT PERCEPTIONS OF THE ACHIEVEMENT OF LEARNING OUTCOMES, MOTIVATION, ENGAGEMENT AND SATISFACTION

To combine the different pieces of evidence into a coherent bigger picture, the current study aimed at determining how the design of learning outcomes relates to student perceptions of the achievement of course unit learning outcomes, motivation, engagement and satisfaction (Article III).

One of the most novel and important findings of the current dissertation concerns the relationship between the design of learning outcomes and student perceptions. Firstly, the findings demonstrated that the design of the learning outcomes directly relates to how students perceive their achievement of learning outcomes, motivation, engagement (i.e. effective learning) and satisfaction. Next, it emerged that students were more likely to be satisfied, engaged with their studies and motivated to achieve the learning outcomes, which were designed at a higher levels of cognitive demand. Students are emphasising the desire to learn at a higher level of cognitive demand and the previous studies have highlighted that practicing higher level thinking skills have the potential to positively impact students' study habits, leading to meaningful learning (Momsen et al., 2010). Considering the abovementioned evidence, the question is, why is the practice not reflecting those aims and what could be done to enhance the current practices in responding to the societal needs?

In accordance with previous studies, the results have demonstrated that expecting students to perform at cognitive levels which require more complex ways of thinking than just memorising facts, increases the likelihood of students taking personal responsibility for their learning and development (Brooks et al., 2014; Ghanizadeh, 2016). Moreover, the results emphasise that the design of learning outcomes may not be taken just as a formality, as learning outcomes designed at a lower levels may consequently lead to students' disengagement with their studies. Similarly to previous studies (Swart, 2010) this dissertation also suggests that students can no longer be expected simply to recall facts and figures, because it is not sustainable in a longer perspective. Students need to be taught how to think and reason, so that they are able to apply their knowledge in beneficial ways (Swart, 2010).

Without any doubt, teachers are in a powerful position to influence students learning. By developing engaging learning environments, it is possible to engage students in study behaviours that are consistent with the achievement of high-quality learning outcomes (Kuh, 2009). To maximise the quality of student learning outcomes, teachers need to develop courses in ways that provide students with learning experiences which are authentic, constructive, aligned, relevant, require students to use and engage with progressively higher order cognitive processes and provide challenge, interest and motivation to learn (Meyers & Nulty, 2009).

Surprisingly, no evidence of a relationship emerged between the design of learning outcomes and students' perceptions of whether they had made the best use of the

learning experiences in the studied course unit. As highlighted before, when students are not involved in the study processes and explained how learning outcomes ought to guide their learning (Hadjianastasis, 2017), a disconnection between learning outcomes, students' learning and achievement of learning outcomes may occur. Which in turn may lead students to lose interest in taking responsibility for their learning and instead of investing into their professional development, they tend to choose to participate passively, doing the minimum for the provided degree (Mägi, Aidla, Reino, Jaakson, & Kirss, 2011).The results of this dissertation highlight the importance of the design of learning outcomes and developing engaging learning process for students. As demonstrated in the current study, the learning outcomes, which were designed at lower levels of cognitive demand, significantly contribute to one third of the students not being engaged to their studies. This is crucial since disengagement with studies may potentially lead students to drop out from their studies (Fredericks, Blumenfeldt, & Paris, 2004). Students' responses showed that students would more likely to be engaged to their studies, satisfied and motivated to achieve the learning outcomes, which were designed at higher levels of cognitive demand. This refers that learning outcomes designed at lower levels of cognitive demand do not respond to student, nor meet labour market needs which confirms the concerns highlighted in previously conducted research (Cedefop, 2017; Harvey & Kamvounias; Haridus- ja Teadusministeerium et al., 2014; Sadler, 2016). The role of higher education institutions, however, is to provide something new (Murtonen, Gruber, & Lehtinen, 2017) to prepare students for facing and developing the future society. The results of this study indicate that in order to reach this role, Estonian higher education institutions need to upgrade their standards in teaching and learning, where students are guided how to develop and use higher order thinking skills to make the most of the memorised facts (Booker, 2007; Struyven, Dochy, & Janssens, 2010). Higher order thinking skills (also referred to as transferable skills) are crucial for responding to the complex demands of society (OECD, 2018).

3.5. PRACTICAL IMPLICATIONS

Understanding the factors and the relationships between those factors that support students in achieving the course unit learning outcomes has a great practical value for higher education institutions and teachers in developing challenging and student-centred learning environments for supporting student learning and achievement of learning outcomes.

1. The eVALUate student evaluation survey used in this dissertation is on the one hand valuable for teachers in understanding student perceptions about their learning in outcome-based education. On the other hand, for higher education institutions who have used the same survey instrument, it provides an opportunity to benchmark teaching and learning practices, to use the results for quality assurance purposes and improvement of the teaching and learning practices. Significantly, data collected with eVALUate instrument allows

universities and teachers to understand whether the desired changes in the teaching and learning paradigm are taking place at the course unit level.

2. Knowledge about the factors which support student achievement of the learning outcomes helps teachers to understand how their planned learning outcomes, teaching and assessment methods are perceived by students, what is working for students and what might be the aspects that need revision for further practices. Although, each student perceives their learning experiences individually the generalised information about the factors supporting student achievement of the learning outcomes gives valuable feedback to teachers.

3. Evidence about the aspects of the learning process and student factors, which explain student engagement in achieving the course unit learning outcomes is valuable in practice since it helps teachers to create engaging learning environments with students, that support students in becoming autonomous, self-directed learners who take responsibility for their learning. This knowledge also supports student engagement strategies. Kuh et al. (2008) suggest that teachers should give students more assignments that require students to take greater responsibility for their learning. More responsibility in turn, should engage students to learn and value the effort and time they have invested in their learning. Additionally, the information about the aspects that predict engagement should be presented to students to raise their awareness about how students themselves could take control over those factors for being more engaged with their studies (Kahu, 2013). In doing so, the principles of constructive alignment and how the learning process is designed should also be introduced to students for making them aware of how the learning process might help them to engage and take responsibility for their learning.

4. Evidence about learning outcomes levels of cognitive demand and the relationships to student motivation, engagement, satisfaction and achievement of the learning outcomes provide teachers with the necessary evidence that emphasise the vital importance of learning outcomes design. The evidence also suggests that designing learning outcomes at higher levels of cognitive demand, which in accordance with earlier studies (Brophy, 2013; Redeker et al., 2012; Struyven, Dochy, & Janssens, 2010) seem to be valued by the students in this study. Moreover, it is believed that learning outcomes at higher levels of cognitive demand support the development of transferable skills such as critical thinking, creative thinking, problem solving, self-regulation, which all give students better opportunities for succeeding in the labour market and responding to the needs of today's and future society (European Commission, 2017; OECD, 2018).

5. In designing an outcome-based learning process it is important for teachers to think about how to design the learning process in ways that would lead to student engagement (Biggs, 2014). In this process, the change in teacher and students' ways of thinking towards student-centred learning needs to be supported by higher education institutions through training courses and mentoring to both

students and teachers from the beginning to the end of the learning process. Although, changes in teaching and learning take time, research has shown that pedagogical development programmes can have a positive impact on the development of the learning focused approach (Postareff, Lindblom-Ylänne, & Nevgi, 2007). Moreover, the understanding of what outcome-based education is about and why it is relevant to all stakeholders needs to be explicit and discussed. It is evident, that the conceptual shift to student-centred learning is not achievable when universities focus only on producing regulations. Instead, the transformation of teachers teaching into students learning is more likely to occur with a change in management style, where meaningfulness, ownership and dialogue are systematically planned, practiced and researched.

3.6. LIMITATIONS AND FURTHER DIRECTIONS

Implementing outcome-based education can be challenging, because several aspects of the learning process and student factors influence student learning and achievement of the course unit learning outcomes. Since one dissertation cannot cover all possible aspects around student learning, this dissertation focuses to the aspects highlighted by Oliver et al. (2008), who developed the original eVALUate instrument. Using the existing instrument could be a strength and a limitation at the same time. On the one hand, this gives a valuable input for benchmarking students learning in outcome-based education and generalising the findings beyond the Estonian context. On the other hand, it may miss some crucial aspects of either the learning process or student factors that are not included in the instrument, but are influencing significantly student learning in outcome-based education e.g. self-regulation, emotions. These factors may be captured when using qualitative approaches.

Research has shown that eVALUate is a useful tool for determining where the positive and problematic areas in students' learning and achievement of learning outcomes are (Article I, Oliver, et al 2008). However, one must be aware that when interpreting the results, eVALUate measures aspects in the learning process and student factors with one item only. If one wants to know exactly what may cause problems in a students' engagement or motivation, further data needs to be collected to grasp and understand the issues in depth. For example, using the motivation or engagement themed instruments, then conducting further interviews with students or longitudinal studies. Moreover, when generalising the student engagement results, it is important to acknowledge that the engagement may vary according to the studied discipline (Brint, Cantwell, & Hanneman, 2008), and therefore cross-disciplinary instruments may not lead to the desired outcomes (Kahu, 2013). For understanding and increasing student engagement, further study of how higher order learning outcomes relate to student engagement could expand teachers' opportunities to support student learning and achievement of higher order learning outcomes. From another perspective, a further study with more detailed information of the aspects that

explain student engagement in outcome-based education is needed to determine the reasons behind student engagement.

The preliminary design of this study aimed to collect data from all the Estonian higher education institutions for understanding how outcome-based education has been implemented in the whole higher education sector. Since many higher education institutions were not able or did not want to participate in this study, one must be cautious about generalising the findings, because the results may not represent the majority of students in Estonia, especially, since no students from the STEM field were represented in the sample. Research has shown that student perceptions to their learning experiences may differ depending on their studied disciplines (Lindblom-Ylänne, Pihlajamäki, & Kotkas, 2006).

Moreover, the main focus for further directions should be on conducting qualitative research for establishing how teachers make decisions about formulating learning outcomes and how much the designed learning outcomes actually reflect teachers' intentions and conceptual understanding about learning. Additionally, do these conceptual understandings reflect their practices and result in changes in student learning and engagement. Recent research in Estonia has shown that qualitative methods are valuable in exploring the relationships between teachers' approaches to teaching and students' approaches to learning and learning outcomes (Uiboleht, Karm, & Postareff, 2018). For connecting the links of student engagement and outcomes-led learning, it would be worthy to conduct intervention studies to reveal which learning outcomes design, teaching and assessment methods support students in achieving the skills and knowledge anticipated by the labour market. Overall, both student and teacher background characteristics, previous experiences and training should be included in the analysis to determine how much they affect student achievement of learning outcomes and teachers in designing learning outcomes. Lastly, it would be interesting to conduct case studies where teachers and students design learning outcomes together to see whether this approach helps students in becoming more engaged and autonomous learners.

CONCLUSIONS

Outcome-based education is a widely investigated field, but only a few studies have focused on how the implementation of outcome-based education has been perceived from the students' perspective and at the course unit level (Brooks et al., 2014; Deneen et al., 2013). Therefore, the current dissertation aimed to contribute to filling this gap by reporting students' experiences of the implementation of outcome-based education in Estonian higher education. The theoretical and practical conclusions of this survey are as follows:

1. This study determined that students' achievement of course unit learning outcomes is supported by aspects of the learning process such as: clear learning outcomes, experiences of study formats, learning resources, assessment during the course unit, assessment alignment, feedback (to lesser extent among Australian students), workload and teaching activities. Student achievement of course unit learning outcomes was also supported by student factors such as: motivation, engagement and satisfaction. However, approximately one third of Estonian students were not engaged to make the best use of their learning experiences, nor did they think about how they could have learned more effectively in the studied course unit. Firstly, these results indicate that student engagement is an important factor that needs attention when implementing outcome-based education. Secondly, student learning in outcome-based education warrants further research, because the efforts of changing the teaching and learning paradigm by using learning outcomes has not transformed the students' passive role in learning. Moreover, the lower student engagement results indicate that the conceptual change in student thinking, assumedly led by the implementation of outcome-based education, has not taken place.

2. Knowledge about the aspects of the learning process and student factors, which explain student engagement in outcome-based education is essential for practice, since it helps teachers to create engaging learning environments. Thus, it is important that teachers and stakeholders build support systems for students to be able for themselves to take control over those factors in becoming more engaged in their learning. Moreover, it is relevant to invest in building student awareness about how constructive alignment works and how it can support their engagement for helping students to understand their role and responsibility as a learner. Before teachers are able to use the abovementioned knowledge in their practices, teachers themselves need to acquire the skills for changing their practices. Hence, the results of this study imply that teachers also need support systems e.g. coaching, mentoring, training that would help them to place their teaching in the context of serving society through developing skills and knowledge about how to create engaging student-centred learning processes that would support students receiving meaningful learning, achievement of learning outcomes and becoming active, autonomous lifelong learners. In doing so,

higher education institutions will significantly contribute to raise the possibility to transform the teaching and learning paradigm.

3. Designing learning outcomes from a student's perspective does not instantly lead students to engage in their learning. The change of the teaching and learning paradigm begins with teachers – their skills and knowledge. Learning outcomes are valuable, because the design of learning outcomes reflects the teachers' ways of thinking of their course unit. As this study revealed, the majority of learning outcomes were designed at the three lowest levels of cognitive demand (Remembering, Understanding, Applying) and none at the highest level of cognitive demand (Creating). Naturally students in this study reported that they achieved most of the course unit learning outcomes. The results of this study are crucial and raise the question of how are higher education institutions responding to the needs of society and the labour market if learning outcomes address only facts that need simply to be memorised?

4. The design of learning outcomes matters. The design of learning outcomes relates to how students perceive their achievement of learning outcomes, motivation, satisfaction and engagement with their learning by thinking how they could learn more effectively in the studied unit. Moreover, students in this study emphasised that they would more likely be satisfied, engaged with their studies and motivated to achieve the learning outcomes, which were designed at a higher order of cognitive demand. This indicates that most of learning outcomes should be designed at higher levels of cognitive demand to avoid student disengagement with their studies.

Despite implementing outcome-based education for almost ten years in Estonia, the results of this dissertation demonstrate that there is room for development. Students lack of engagement with their studies infer that designing learning outcomes from student perspectives and achieving those learning outcomes does not guarantee that students will be engaged with their studies. Higher education institutions need to pay extra attention to transitioning the traditional concepts of teaching and learning towards student-centred learning and invest in the development of teacher skills in operating higher levels of cognitive demand. As the majority of learning outcomes were designed at lower levels of cognitive demand, it is evident that the design of learning outcomes warrants greater focus from higher education institutions. The results of this study show that implementing outcome-based education is not as simple as emphasised on paper, however, in improving the implementation of outcome-based education one should begin by conceptualising and understanding the relevance of the design of learning outcomes to student learning. Implementation of outcome-based education should be systematic, transparent and reflect the actual activities undertaken in learning situations in ways that no student will be left with the question of: "What was I supposed to gain from this course?"

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Validation of a unit evaluation survey for capturing students' perceptions of teaching and learning: A comparison among Australian and Estonian higher education students

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ABSTRACT

This study reveals the results of validating and implementing a student evaluation survey called eVALUate into the Estonian higher education context for the purpose of benchmarking and determining those factors that help and hinder students to achieve the intended learning outcomes. A comparison of the responses from Estonian and Australian students indicated that the factors that least helped students in their achievement of the learning outcomes were: in the Estonian case, student engagement with their learning and in Australian case, feedback on students' work. These results help to evaluate current teaching and learning practices within an outcomes-based paradigm and provide a comparison for self-improvement for the purpose of transforming higher education.

In the last decade the Bologna Process has been implemented in the European Higher Education sector leading to major reforms that aim to improve the sustainable quality of higher education by transforming programmes to be more transparent and comparable through outcome-based education (Attard, Di Ioio, Geven, & Santa, 2010; Sursock & Smidt, 2010). These reforms include the establishment of external and internal quality policies for measuring and comparing the overall quality of higher education institutions (Huisman & Westerheijden, 2010). Such measures of quality include student evaluation surveys for capturing student feedback on their experiences. However, student evaluation surveys traditionally focus on the activities of the teacher. The adoption of outcome-based education has provided the impetus to reconsider current student evaluation surveys and to develop evaluation surveys that ask students their perceptions of what is helping or hindering their learning.

Student-centred learning in outcome-based education

One of the aims of the Bologna process is to ensure that greater emphasis has been placed on the student and their role in learning. As a result, higher educational institutions, stakeholders and teachers are encouraged to place student learning at the centre of their goals (Barr & Tagg, 1995; Biggs & Tang, 2007; Lokhoff et al., 2010; Marsh, 2007; McKeachie, 2007). In doing so, the focus in higher education has shifted to student learning rather than teaching (Attard et al., 2010).

To evaluate student-centred approaches to learning within the outcomes-based education system, universities should focus on how students are learning rather than on asking students' perceptions of teaching quality (Barrie, 2000; Carey & Gregory, 2003; Huba & Freed, 2000). One of the widely recommended tools for determining student learning within student-focused education is learning outcomes. Learning outcomes are clear, observable statements created by academics, which are described from the perspective of what students should learn (Spady, 2001). According to Spady (2001), outcomes based education shapes the design and delivery of teaching and learning and the stated learning outcomes drive the course content and assessment structure. Teaching in an outcomes-based system necessitates the development of those aspects that are essential for learners to be able to demonstrate and to choose the strategies that support student learning and achievement of the intended learning outcomes (Rauhvargers, Deane, & Pauwels, 2009). Learning outcomes should be described in ways that support students in choosing flexible learning paths and result in their transparent achievement

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(Sursock & Smidt, 2010). Learning outcomes are the key feature to the implementation of student-centred learning. According to the Biggs and Tang (2007) theory of constructive alignment, the achievement of learning outcomes can be successful if the assessment, teaching strategies, and learning experiences are coherent and connected. Although the focus on student learning has permeated the higher education sector, little research has been published on those factors, which help or hinder students' achievement of outcomes resulting from their learning within outcomes-based education.

Student evaluation surveys

Internal quality measures have been developed to establish how successfully higher education institutions have transformed to student-centred approaches of learning through outcome-based education (Saarinen, 2005). A common internal measure of quality that has been traditionally used in higher education is student feedback collected in student evaluation of teaching (SET) surveys (Spooren, 2012). Students' feedback on teaching and their study experiences give stakeholders valuable information on the quality of teaching and learning and to improve the curriculum in order to better support the desired learning outcomes (Edström, 2008).

Student evaluations are used in almost every higher education institution throughout the world (Knapper, 2001; Marsh, 1987; Spooren, 2012; Zabaleta, 2007). Although there have been many changes in the sector, most student evaluation instruments focus on rating teachers and institutions use this data for institutional accountability, for determining tenure, promotions, and for improving teaching quality (Kember, Leung, & Kwan, 2002; Spooren, 2012). However, as student learning is the ultimate goal of higher education (Ramsden, 2003), particularly within a student-centred paradigm, there is a need to reconsider the appropriateness of current evaluation surveys which focus largely on teacher related activities.

Further, regulatory changes by the government, particularly in Australia have led universities to change their student evaluation systems and surveys so that students' experiences can be publically reported across the sector (Barrie, Ginns, & Symons, 2008). Some Australian universities have adopted two surveys to collect student feedback: a unit survey and a separate teaching survey (Barrie et al., 2008; Shah & Nair, 2012). The separation of the teaching survey from the unit survey provides information about teaching quality for the purpose of scholarly teaching practice involving self-refection, promotions, tenure and teaching awards. In contrast, unit surveys provide information about the student experience for the purpose of quality improvement (Tucker, 2013) and public accountability.

Since the implementation of outcome-based education, many institutions have continued to use pre-existing student evaluation surveys or have developed in-house unit and teaching surveys (Barrie et al., 2008; Woldeyohannes, 2012). The validity and fitness for purpose of such student evaluation surveys has been debated (Alderman, Towers, & Bannah, 2012; Barrie, 2000; Carey & Gregory, 2003; Huba & Freed, 2000; Spooren, 2012; Sursock & Smidt, 2010). The major concerns expressed by researchers relate to the validity of the survey items; many surveys are home grown lacking any psychometric testing and do not reflect the dimensions of teaching and learning within the new paradigm (Onwuegbuzie, Daniel, & Collins, 2009; Spooren, Brockx, & Mortelmans, 2013). The consistent implementation of valid surveys across the higher education sector will provide unique opportunities to benchmark teaching and learning practices and research new pedagogies in teaching and learning in a rapidly changing digital environment (Ernst & Young, 2012; Hajkowicz, Cook, & Littleboy, 2012; Johnson, Adams, & Cummins, 2012).

Student feedback on teaching only reveals one aspect of the learning and teaching process (Spooren, 2012). In learner-centred education the experiences that should be evaluated are the quality of learning outcomes and the process of learning (Denson, Loveday, & Dalton, 2010). Most recently, this learner centred focus has been embedded within student evaluation surveys (Oliver, Tucker, Gupta, & Yeo, 2008; Zerihun, Beishuizen, & Van Os, 2011). An extensive search in the literature, conducted in 2009, revealed that only one published and valid survey focusing on student learning was found (Oliver et al., 2008). This survey is currently used in four Australian universities. As the outcomes-based approaches are similar in Australia and Estonia and the student learning survey had already been embedded in an Australian university, an opportunity to research and benchmark results between two countries was made possible. A comparison of students' perceptions in different countries may provide insight into those factors that contribute to successful student learning.

A survey for evaluating student learning

The eVALUate unit survey is a validated mixed method survey tool for gathering and reporting students' perceptions of their learning experiences. The unit survey consists of 13 items where Items 1–7 report students' perceptions of what helps their achievement of learning outcomes; Items 8–10 ask students what they bring to the learning in terms of their motivation and engagement; and Item 11 asks students' about their overall satisfaction with the unit. The qualitative part of the instrument (Items 12 and 13) helps to determine students' perceptions through two open ended questions: 'what are the most helpful aspects of the unit' and 'how the unit might be improved' (Oliver et al., 2008). For the quantitative items (Items 1–11), students are asked their perceptions on a categorical scale (strongly agree, agree, disagree, strongly disagree and unable to judge). Explanatory text is provided to each quantitative item. For example the explanation of the term learning outcomes is provided.

The survey is administered online through the student web portal. The survey is open for six weeks (including the two week examination period) and non-responders are sent weekly emails encouraging them to give feedback. A full description of how the system works is described in Tucker (2013).

The Estonian context

Higher education in Estonian has changed as a result of the reforms conducted through the Bologna process. A new quality agency (named the Estonian Higher Education Quality Agency) has been formed and since 2009 outcome-based education has been compulsory. Within Estonia, every higher education institution must develop and implement internal evaluation surveys for the purpose of quality enhancement (EKKA Quality Assessment Council, 2012). Whilst most surveys are administered online, they vary in length, question types, formats, aims, design and so on. An analysis of the unit (also called subject) evaluation surveys from a single large university conducted in 2010 revealed that no survey provided feedback on the students' achievement of the intended learning outcomes (Kumpas & Õunapuu, 2011). Examples of items typically used in unit surveys are:

(1) In my opinion the teacher was competent to teach this unit;
(2) The teacher kept the promised deadlines during this unit; and
(3) In my opinion the teacher was prepared well for every teaching unit (Kumpas & Õunapuu, 2011).

Within Estonia, each bachelor degree is 3 years in duration totalling 180 European Credit Transfer System (ECTS). Programmes

comprise units that are usually between 2 and 5 ECTS each. Students enrolled full-time may study 6–15 units each semester (approximately 30 ECTS). The number of units studied and their ECTS value is dependent on the programme of study. Typically, students are invited to give feedback on each unit at the end of the study period and in some universities, feedback is mandatory.

The Australian context

In Australia, outcome-based education was implemented in the secondary education system in 1998 however concerns raised by parents and teachers in regard to inappropriate assessments and standardised outcomes resulted in it being largely discontinued in 2007 (Alderson & Martin, 2007; Donnelly, 2007). This Federal Government reform led to changes in the higher education sector which implemented student-centred learning (Chalmers, 2007). One large Australian university implemented an outcomes focused approach to student learning that aligned with their philosophy of teaching and learning. The University also developed a valid unit survey (called eVALUate), underpinned by outcomes focused education that asks students' perceptions of those factors that help or hinder their achievement of learning outcomes (Oliver et al., 2008).

Within the Australian university, each bachelor degree is at least 3 years in duration totalling 600 credit points (cpts). Programmes usually comprise 24 units that are 25 cpts each. Students enrolled full-time usually study 4 units each semester (100 cpts). Each unit is automatically included in eVALUate each time the unit is available however; it is not mandatory for students to give feedback. The primary aim of this study was to implement and validate an evaluation survey that would gather students' perceptions of the aspects that help or hinder their achievement of unit learning outcomes. This aim will enable researchers to understand the student experience within an outcomes based education paradigm where student centred learning is the focus of the educational approach. The study also aimed to compare the perceptions of Estonian students and students from one Australian university to reveal similarities and differences in their experiences of student centred learning. This comparison was only feasible with the implementation of the same evaluation survey in both countries. This study reports on the modification, validation and implementation of the unit survey in the Estonian higher education context and compares the Estonian students' perceptions of their learning at institutional level, to those of one university in Australia. This study was one part of a larger investigation examining students' perceptions of their achievement of learning outcomes.

Methodology

Development of the survey

Following an extensive search in the research literature and an examination of evaluation surveys within universities in Estonia, the eVALUate unit survey was selected for the purpose of this study. The full validation process of the Estonian version of the survey included several steps starting from (1) the translation of the instrument, (2) pilot studies and (3) focus group interviews. Prior to the beginning of this research, approval to undertake the study was granted by each participating institution in accordance with their institutional processes. Completion of the evaluation survey was voluntary and submission of the survey indicated the student's consent to participate in the study. Students were assured that their feedback would be anonymous and the results would only be reported in an aggregated format. The survey was administered to students in the Estonian language.

Translation of eVALUate

Translation of eVALUate commenced in 2011 when three Estonian researchers/specialists, who worked specifically in the field of quality in higher education were invited to assist the researchers in translating the survey. The specialists had roles within the government and/or held academic and institution stakeholder positions. First, each specialist translated the survey separately. Differences were identified, debated and consensus on item wording was reached. On request from the institution stakeholders, two quantitative items were also added to the end of the quantitative part of the survey. Explanatory text in italics is included with each item where appropriate. These items were:

(1) This unit focused on the important issues for me.
(2) This unit contributed to the achievement of curriculum objectives and learning outcomes.

Curriculum is the basic document which determines the conditions for starting the study, study goals, expected learning outcomes, the time for study; list of the units their workload, assessments and programs.

These two items were added to provide feedback to the universities however were not included as part of the survey per se.

To further unearth students perceptions of learning, the qualitative items of the eVALUate unit survey were modified. The original survey comprised two qualitative items. After the first translation of the survey from English into Estonian, a vice versa translation was completed.

Pilot study 1

A pilot study was undertaken to determine the face validity of the translated and modified survey to ensure relevance and clarity of the items. A total of 474 Estonian Entrepreneurship University of Applied Sciences (EUAS) students were invited to participate in the pilot study. Two hundred and eighty seven students completed the survey, a 61% response rate. The participants were bachelor level students who were recruited with the assistance of academics. Units were purposely selected to gather feedback from a variety of student groups including different year levels and faculties. Students were instructed to fill out a paper based version of the survey during a face to face class at the end of the teaching week of the 2011 spring semester. The researcher invited students to fill in the survey and remained in the classroom to allow students to seek clarification of any items that were unclear and recorded the questions raised about the survey.

A comparison of the results of the first version of the modified eVALUate survey and previous survey used in EUAS showed that the response rates were six times greater and students wrote longer and richer comments in the modified eVALUate survey (Kumpas & Õunapuu, 2011). These results gave the impetus for EUAS to change the student evaluation survey towards an outcome-based education and student-centred paradigm. After the first pilot study, wording of some of the survey items was modified and subsequently embedded within an online survey environment called LimeSurvey. To assure the validity of the changed survey a second pilot study was conducted.

Pilot study 2

The second pilot study was conducted in three different Estonian higher education institutions. To provide a purposeful sample of students, a variety of faculties were selected (economy, health and social sciences) from two types of institutions

(university or university of applied sciences). With the assistance of academics from these universities, students were invited via email to give feedback on their experiences. The survey, linked to the email, was open for feedback a few days after the end of each unit and was available for three weeks duration. During that time a reminder was sent weekly to non-responders. The data was de-identified prior to data analysis.

A total of 1947 students were invited to complete the unit evaluation survey and 514 survey submissions suitable for analysis were received (response rate = 26.4%). Students' perceptions about their learning and their achievement of the intended learning outcomes were gathered about 38 units. The response rate to pilot study 2 was 26.4%. Cronbach's alpha, undertaken using SPSS Statistics Version 21.0, showed high internal consistency of the survey items (α = .93).

Following the data analysis and discussions with one of the authors of the eVALUate unit survey, the most significant change in item wording from the original survey items related to Item 4 "The assessment tasks in this unit evaluate my achievement of the learning outcomes." Within the Estonian context, it was determined that two items were necessary to capture learning activities under the theme of assessment. The two items with explanatory text in italics replacing Item 4 were:

(1) 4a. The tasks completed during this unit help me to achieve the learning outcomes.

Unit tasks are defined by the teacher. The tasks may be individual work, group work and evaluation of the different tasks (exam, etc.).

(2) 4b. The tasks given by the teacher evaluate my achievement of learning outcomes.

Assessment tasks are the ones that end with an evaluation, grade or the teacher's feedback. For example, exam, homework, group work, written work, etc. Assessment tasks directly assess students' achievement of the learning outcomes.

Two focus group interviews, comprising three students in each group, were then conducted in the autumn semester of 2012 to gain an insight into the students' interpretation of each item in the survey. The students were asked to "explain their understanding of each item" and the researcher recorded their responses. Students were also encouraged to provide suggested wording of the items. Following the focus group interviews further minor modifications were made to the wording of the items in the Estonian version of the survey (see Appendix 1 for the final version of the instrument translated in English).

Full validation of the survey

Eight faculties from six Estonian higher education institutions agreed to participate in the main study. To provide a purposeful sample of students, a variety of faculties were selected (economy, arts, health, social sciences) from two types of institutions (university or university of applied sciences). The faculty heads/administrators were asked to provide a targeted sample of units from each of the following criteria:

(1) level of study (bachelor);
(2) units with large (>50) and small (<50) enrolments;
(3) form of study (internal and external mode);
(4) area of study (courses from different faculties); and
(5) generic units and specialty units.

As each Estonian institution has its own evaluation system, the survey was conducted in addition to the institution's internal evaluation survey. In order to minimise survey fatigue, it was decided that a student would only be invited to give feedback on up to four different units. Additional demographic items were included with the survey including: sex, age, form of study, level of participation with their classes and hours spent on the study outside the class. The unit name, size and teacher names were provided by the institution and included within the email invitation.

Students were invited to give feedback at the end of their unit in the autumn semester of 2012. Once again, the survey was opened for feedback for three weeks duration and during that period, three reminders were sent to non-responders. Prior to responding to the survey, students were informed that their feedback was anonymous and that the results would only be reported in an aggregated form. The data was de-identified prior to data analysis.

Data analysis

Descriptive statistics were used to describe the demographics of the sample. Rasch analysis was used to test the item validity, reliability and stability of the rating scale. The validation analysis comprised of the Rasch Rating Scale model with the aid of RUMM2020 software. This approach was deemed appropriate because of the use of Likert-type rating scale response categories. Furthermore the Rash analysis was not complemented with the factor analysis, as it would not add any value to the results (Christensen, Engelhard, & Salzberger, 2012). The surveys internal consistency was calculated with Cronbach's alpha by using SPSS Statistics Version 21.0. To compare the results from Australian students and Estonian students, aggregated percentage agreement (percentage of responses with 'agree' or 'strongly agree') was calculated and analysed at the level of the institution (Oliver et al., 2008).

Results

A total of 3669 students were invited to complete the unit evaluation survey and 1329 survey submissions suitable for analysis were received (response rate = 36.2%). Where a survey contained minimal data (e.g. only demographic information), the survey was excluded from the analysis. The number of students and units from each institution and the field of study in which they were enrolled are shown in Table 1.

Results of the validation

Cronbach's alpha, undertaken using SPSS Statistics Version 21.0, showed high internal consistency of the survey items (α = .92) and therefore it is considered as a reliable measure of students' affirmation. For determining the instruments suitability in each institution Cronbach's alpha at unit level (n = 78) was also calculated. The minimum and maximum alpha values in the units of Institution 1 were (α = .80–.91), Institution 2 (α = .77–.94), Institution 3 (α = .77–.96), Institution 4 (α = .86–.93), Institution 5 (α = .74–.92), Institution 6 (α = .79–.89). Unit based reliability analysis showed that the instrument worked well in each institution regardless of the differences in teaching practices.

The Rasch analysis was performed on 1099 responses (the responses for the Unable to Judge category were omitted). The Strongly Agree and Agree categories were the most frequent responses (85.5) for all questions, implying that the majority of students had positive views of their learning and teaching and the analysis revealed that the rating scale (Strongly Agree, Agree, Disagree, Strongly Disagree) work well and is suitable for statistical analysis. The RUMM summary test-of-fit-statistics showed that the separation index value was 0.88638, which indicates that the

Table 1
Number of students from each institution.

Institution	Field of study	Number of units	Number of students
Institution 1	Service	7	86
Institution 2	Social sciences, business and law	13	224
Institution 3	Health and wellbeing	8	111
Institution 4	Health and wellbeing	33	575
Institution 5	Social sciences, business and law	8	240
Institution 6	Humanities and arts	9	93
Total number		78	1329

N.B.: The Field of Study was categorised according to the Estonian Research Portal (2013).

respondents tend to spread across the continuum and thus the power in detecting that items do not fit the model is excellent. The analysis of each item in the instrument revealed that they measure multivariate traits of teaching and learning. The ordering of the thresholds with the exception of Item 1 (the learning outcomes in this unit are clearly identified) indicates that the students are logical and consistent in their choice of response for all items. For Item 1 the thresholds are disordered, indicating that the Item is not working correctly and needs to be refined.

Comparison of student perceptions: Estonia and Australia

Following the validation of the survey, a comparison of institutional level evaluation data using the quantitative items of the survey was undertaken to determine whether undergraduate students' perceptions from two different countries were similar. The data was collected from 78 units from six Estonian institutions and 1067 units from one Australian university during comparable teaching periods in the late part of 2012. In the Estonian sample, 57% of the respondents were between 19 and 22 years of age or younger and 82% was female. The students in the Estonian survey indicated that they had been participating in most or all the lectures in the surveyed units. In the Australian sample, 45% of the students were 20 years or younger and 53% of the respondents were female. The data from Australia included all students studying in the university (including face-to-face teaching, blended and online modes of study) whereas in Estonia, the data was obtained from a purposeful sample. The overall survey response rate was similar in both of the countries (Estonia = 36.2%; Australia = 35.9%).

Aggregated percentage agreement for each survey item for students from Australia and Estonia is shown in Fig. 1. The two

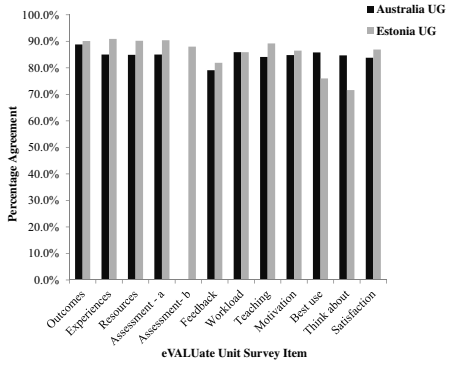

Fig. 1. Percentage agreement with each eVALUate unit survey item from Estonia and Australia.

assessment items from the Estonian survey are shown separately (represented as Assessment a and b). Overall, students from both countries indicate a high level of agreement (around 80% agreement or higher) with most items. Estonian students were more likely to agree with most items than Australian students except for the engagement items and the item on workload (where perceptions were similar). Most notably, Estonian students indicated less agreement with the items on student engagement (Items 9 and 10) and Australian students had less agreement with Item 7 (feedback). The differences between Estonian and Australian students' perceptions percentage agreement were between of 0% to 13.1%. The greatest differences in perceptions were related to the students' perceived engagement in learning (Australian higher for Item 9 = 9.8% and Item 10 = 13.1%). On average the differences were around 5%.

A comparison of the survey quantitative items (aggregated percentage agreement) from each institution in Estonian and each country is shown in Table 2. Where percentage agreement is less than 80% for an item, the cell is highlighted in box to indicate that the item is lower than what is considered acceptable (a standard set at the Australian university) and that the item warrants further investigation (Oliver et al., 2008). The table shows that students' evaluations from two institutions (Institution 3 and 6) were considerably lower than those of students in other universities.

Discussion and conclusions

Previous studies of the eVALUate unit survey show that it is a valid tool for measuring students' perceptions about those aspects that help and hinder their achievement of the intended unit learning outcomes, their motivation and engagement in the learning process and overall satisfaction (Oliver et al., 2008). When adopting existing surveys into another educational context the reliability and validity must be tested again for ensuring the surveys applicability (Marsh & Roche, 1993). Pilot studies, conducted in Estonia, ensured the accuracy and face validity of the modified unit survey. The final version of the Estonian unit survey differs from the original because Item 4 (assessment tasks) was divided into two questions to ensure the accurate translation of the content of the Item from the original survey. An assessment task in the Australian context includes all formative and summative assessments within a unit. In the Estonian context, there is no exact translation for assessment task. Assessment comprises those tasks that are formative and summative however the term task is expressed differently and not combined with assessment in the classroom context.

The full validation analyses of the final Estonian unit survey showed that the instrument is a reliable measure of students' affirmation from multivariate traits (from the seven aspects that help students to achieve the learning outcomes, three aspects about student motivation and engagement and one aspect about students satisfaction). The rating scale is suitable for statistical analysis and the results should be reported as a percentage agreement with each item. The students were consistent and

Table 2
Estonian and Australian students' perceptions.

				What helps achievement of the learning outcomes									Student motivation and engagement			Satis-faction
Institution	Number of enrolments	Number of responses	Response rate	1. Outcomes	2. Experiences	3. Resources	4. Assessment - a	4. Assessment- b	5. Feedback	6. Workload	7. Teaching	8. Motivation	9. Best use	10. Think about	11. Satisfaction
Institution 1	233	86	36.9%	95.3%	96.5%	98.8%	98.8%	96.5%	94.2%	95.3%	96.5%	91.9%	76.7%	65.1%	95.3%
Institution 2	745	224	30.1%	89.7%	93.8%	91.1%	93.8%	88.4%	82.6%	90.6%	90.6%	87.9%	72.3%	67.4%	87.5%
Institution 3	403	111	27.5%	80.2%	79.3%	73.9%	80.2%	74.8%	64.9%	72.1%	77.5%	70.3%	59.5%	67.6%	71.2%
Institution 4	1473	575	39.0%	91.8%	90.6%	91.1%	90.6%	89.6%	85.4%	86.4%	89.6%	88.0%	78.1%	73.2%	87.5%
Institution 5	484	240	49.6%	91.7%	92.9%	92.9%	92.9%	92.1%	84.2%	88.3%	92.9%	89.6%	87.1%	82.1%	92.5%
Institution 6	331	93	28.1%	82.8%	82.8%	87.1%	79.6%	74.2%	62.4%	72.0%	81.7%	79.6%	62.4%	55.9%	78.5%
Estonia total	3669	1329	36.2%	90.1%	90.9%	90.2%	90.4%	88.0%	81.9%	85.9%	89.2%	86.5%	76.0%	71.6%	86.9%
Australian University	97273	34885	35.9%	88.5%	85.0%	84.9%	85.0%		79.1%	85.9%	84.1%	84.8%	85.8%	84.7%	83.8%

logical in their response choice. For Item 1 the thresholds are disordered, suggesting that the Item is not working correctly and needs to be refined. Further investigations (for example student and teacher interviews) are necessary to determine how students are informed about the unit learning outcomes and students' understanding of the learning outcomes. Rasch analysis provides validity evidence based on instrument internal structure, further research using confirmatory factor analysis may be performed to confirm the factor structure of the instrument (Raju, Laffitte, & Byrne, 2002).

The results of this study give insight into students' learning in outcome-based education. This study revealed that, when comparing aggregated university data, the factors that least helped students in their achievement of the intended learning outcomes were student engagement with their learning (in the Estonian case) and feedback on student learning (in the case of one Australian university). Further research is planned to compare the student experiences at the unit and course level and where different teaching and learning approaches are utilised.

The differences among Estonian and Australian students might be explained by the differential student profile for this study. Previous research on eVALUate undertaken in Australia has revealed that female students, those enrolled full-time study and students with higher grades are more likely to give feedback on their learning. Those students who are studying part-time, who are international students, older or achieve a high grade are also more likely to agree with each item (Oliver, Tucker, & Pegden, 2007; Pegden & Tucker, 2009). Whilst these differences are small (1–5%), it is likely that the Estonian sample comprised a different population profile. For example, the smaller Estonian sample did not include a full spread of units representing all fields of study; most notably there were none from the Sciences or Engineering. These courses typically have a greater number of male students who indicate they are less satisfied (Pegden & Tucker, 2009). The majority of Estonian students in this survey were female, aged between 19 and 22 years who indicated that they were highly motivated and had participated in most of the lectures in the surveyed units. These findings suggest that the current results from Estonia may be higher than expected. It is however concerning that the low percentage agreement with the items in engagement with learning may be higher than expected for students in Estonia.

The low agreement with items on student engagement with learning reveals that many of the students did not make the best use of the learning experiences and they did not think about how they could have learned more effectively. Zerihun et al. (2011) found that the majority of Ethiopian students, who are in an outcomes-based educational system, saw their role in teaching and learning as: being passive listeners to teachers' presentations; attending classes regularly; and note-takers while being in the lecture. This indicates that most of the students did not see their role as being active learners who analyse what they have learned, read extra material to understand the topic and link what they have learned into real life situations. The results of this study are consistent with those of Kumpas (2013) who found these characteristics in Estonian students who believed that the teacher is responsible for their learning.

A limitation of this study is that the Estonian sample is considerably small compared to the Australian sample and the results may not represent the opinions of the majority of students in Estonia given the samples comprised different programme types. Feedback from all universities across the Estonian higher education sector is recommended to ensure student feedback is obtained from participants within each demographic and on each subgroup (including non-responders) to determine whether there is a difference in students' perceptions of achieving the intended learning outcomes among Estonian students and to confirm the results of this validation study.

Comparing the results of Estonian and Australian students' perceptions about their learning in outcome-based education captured with the same survey gives the institutions an opportunity to benchmark the teaching and learning practices. Benchmarking eVALUate unit survey data will reveal those factors that help or hinder student learning in outcome-based education. The comparison of aggregated university data provides an indication of those factors which students perceive to help or

hinder their learning. Institutional student evaluation data is used for quality assurance purposes and to inform university-wide approaches to improving teaching and learning. Further research and benchmarking of student perceptions results of teaching and learning in different institutions, countries and contexts assist educators in evaluating the current teaching and learning practices and gives a valuable comparison for directing the institutions self-improvement. Such collaborative research can direct and transform future teaching and learning practices in higher education. In order to do so further analysis for unearthing the reasons for the differences in students' perceptions is relevant.

Author note

This study reports the preliminary results gathered with the fully implemented and modified Estonian survey in comparison with the consistent student evaluation surveys in an Australian university. Detailed findings from the full Estonian survey will be published elsewhere.

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Appendix 1. Estonian eVALUate instrument

Questions about the descriptive statistics asked students about their form of study, sex, age, frequency of the attendance in the lectures and the amount of hour's students learned for the unit outside the contact classes.

The quantitative part of the survey asks students to evaluate the items on the following rating scale (strongly agree; agree; disagree; strongly disagree; unable to judge). Explanatory text in italics appears online by default.

(1) The learning outcomes in this unit are clearly identified.

The learning outcomes are what you are expected to know, understand or be able to do in order to be successful in this unit. Learning outcomes are described in the course programmes and they are introduced to students by the lecturer.

(2) The Learning experiences in this unit help me to achieve the learning outcomes.

The learning experiences could include: face-to-face lectures, tutorials, laboratories, clinical practicums, fieldwork, directed learning tasks, and online and distance education experiences.

(3) Learning resources in this unit help me to achieve the learning outcomes.

Learning resources could include print, multimedia and online study materials, and equipment available in lectures, laboratories, clinics or studios.

(4a) The tasks completed during this unit help me to achieve the learning outcomes.

Unit tasks are defined by the teacher. The tasks may be individual work, group work and evaluation of the different tasks (exam, etc.).

(4b) The tasks given by the teacher evaluate my achievement of learning outcomes.

Assessment tasks are the ones that end with an evaluation, grade or the teacher's feedback. For example, exam, homework, group work, written work, etc. Assessment tasks directly assess students' achievement of the learning outcomes.

(5) Lecturer's feedback on my work in this unit helps me to achieve the learning outcomes.

Feedback gives you an opportunity to get information and evaluations to your work. Feedback might be written or verbal.

(6) The workload in this unit is sufficient to the achievement of the learning outcomes.

One's unit workload may be considered all the necessary work made for of the course. That includes lectures, group work, independent learning, and assessment tasks.

(7) Teaching in this unit helps me to achieve the learning outcomes.

Quality teaching is ensured by the enthusiastic and knowledgeable teachers. Their positive interactions with students in well-organized environments where good teaching and learning experiences are supported.

(8) I was motivated to achieve the learning outcomes in this unit.

Being motivated means having the desire and willingness to complete any goals.

(9) I prepare for the lectures and seminars in order to take the maximum use out of these.

I get ready for the lectures, seminars, practical classes, etc. I look for further reading, I prepare for and follow up learning, I work through the sources that are offered by the teacher in this unit.

(10) I thought about how to learn more effectively in this unit.

I took time to think about how I can learn more effectively.

(11) Overall I am satisfied with this unit.

This unit provided a quality learning experience.

The qualitative part of the survey asks students perceptions about their learning experiences.

(12) What helped you to achieve the intended learning outcomes in this unit?

(13) What hindered you to achieve the intended learning outcomes in this unit?

(14) What was the most important thing that you learned in this unit?

(15) How do you think this unit might be improved?

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II

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Väljundipõhine õpe – kas õppimisse panustava ja kaasatud üliõpilase kujundaja?

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Annotatsioon

Artikli aluseks oleva kvantitatiivse uuringu eesmärk on välja selgitada, kuidas üliõpilased ja õppejõud hindavad väljundipõhise õppe rakendumist õpiväljundite omandamist toetavate komponentide toel. Kuue Eesti kõrgkooli üliõpilaste (n = 1329) ja õppejõudude (n = 94) hinnangutest selgub, et õpiväljundite arusaadavus, õpikeskkond, õppematerjalid, sooritatud tööd, hindamisülesanded, tagasiside, tööde maht, õpetamine, õppijate motivatsioon ja rahulolu toetavad õpiväljundite saavutamist. Samas ilmneb uuringust, et üliõpilased ei panusta ise õppetöösse piisavalt ning ei ole kaasatud õppeprotsessi. Õppetöösse panustamist iseloomustavad peamiselt õppimisse kaasatuse, õppijate motivatsiooni ja tööde mahu tulemused. Õppimisse kaasatust ennustavad enamasti õppimisse panustamise, õppijate motivatsiooni ja rahulolu tulemused. Õppejõudude ja üliõpilaste hinnangud enamiku õpiväljundite omandamist toetavate komponentide kohta oluliselt ei erinenud, v.a hindamisülesannete, õppija motivatsiooni ja kursusega rahulolu puhul. Tulemused näitavad, et senisest enam on vaja toetada õppijaid aktiivse rolli ning vastutuse võtmisel.

Võtmesõnad: väljundipõhine õpe, õppeprotsessi komponendid, üliõpilaste kaasatus, õppimisse panustamine, üliõpilaste ja õppejõudude hinnangud

Sissejuhatus

Väljundipõhine õpe on Euroopa kõrgharidusmaastikul olnud aktuaalne 1999. aastal välja kuulutatud Bologna deklaratsioonist alates (Udam, 2008). Adami (2008) uuringu kohaselt on õpiväljunditena kirjeldatud oskused, teadmised ja hoiakud ülitähtsad, toetamaks õppijast lähtuva õppimise ja õpetamise rakendumist. Traditsiooniliselt on õppekavade koostamisel olnud rõhuasetus sisendil, väljundipõhine õpe seab aga keskmesse õppija ning õpiväljundi saavutamise (Biggs & Tang, 2009; Udam, 2008), mis eeldab nii kõrgkoolidelt, õppe-

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jõududelt kui ka üliõpilastelt senistes õpetamis- ja õppimisviisides fundamentaalseid muudatusi. See on liikumine õppijakeskse õppe suunas, kus õppija ise on aktiivne ja kaasatud ning vastutab oma teadmiste loomise ning õppe kavandamise eest (Barr & Tagg, 1995; Biggs & Tang, 2009; Huba & Freed, 2000). Kavandatud õpiväljunditest ja nende hindamisviisidest teadlik olek annab õppijale suuremad võimalused osaleda õppeprotsessis ning leida enda jaoks sobivaid viise liikumisel eesmärgi poole (Rutiku, Valk, Pilli, & Vanari, 2009).

Kõrgharidusstandardi (2008) kohaselt on õpiväljundid (õpitulemused, ingl *learning outcomes*) „õppimise tulemusel omandatavad teadmised, oskused ja hoiakud, mis on kirjeldatud õppekava, mooduli või õppeaine läbimiseks vajalikul miinimumtasemel". Väljundipõhine õpe (ingl *outcome based education*) on „õppijakesksele lähenemisele tuginev õppekava eesmärgistamine ja õppetegevuse korraldamine, milles põhitähelepanu on hinnatavatel õpiväljunditel" (Pilli, 2009, lk 7).

Kuigi õpiväljundite eesmärk on õppija individuaalse arengu maksimaalne toetamine, näitavad uuringud, et väljundipõhine õpe ei ole ootuspärasel määral rakendunud (Pilli & Vanari, 2013; Tammets & Pata, 2013; Udam, Seema, & Mattisen, 2015). Need õilsad eesmärgid ei saagi realiseeruda, kui nende põhirakendajad – õppejõud – ei ole mõistnud muudatuste põhjuseid ega oska muudatusi rakendada, mis omakorda võib süvendada õppejõudude ja üliõpilaste kriitikat väljundipõhise õppe pihta (Tina, 2008). Seetõttu on ilmselt ka Bologna protsessi nimetatud pealesurutud reformiks ja formaalsuseks, kus õpiväljundeid nähakse bürokraatliku kohustusena, mis täidab auditeerimise ja kvaliteedihindamise eesmärke ega vasta õppija tegelikele vajadustele (Hussey & Smith, 2008).

Enamik senistest väljundipõhise õppe uuringutest keskendub institutsioonide ja reformide tasandi ülesannetele, vähem õppejõudude ja üliõpilaste kogemustele ning muutustele õppija arengus (Hadjianastasis, 2016; Lea, Stephenson, & Troy, 2003). Siinkohal on ühelt poolt parajaks proovikiviks õpetamisprotsessi elementide (õpiväljundite ja -ülesannete, hindamise, tagasiside) kavandamine ning see, kuidas õppijad neid tajuvad. Teisalt aga valmistavad raskusi õppija motivatsioon, kaasatus ja valmisolek osaleda õppijast lähtuvas õppeprotsessis. Kuna väljundipõhise õppe üks peamisi eesmärke on toetada õppijakeskse õppe rakendamist, siis uurimegi, kas väljundipõhisele õppele üleminek täidab oma eesmärki.

Väljundipõhine õpe Eesti kõrghariduses

Eesti kõrgharidusse jõudsid õpiväljundid 2007. aastal kõrgharidusstandardi jõustamisega, millega kehtestati nõuded eri õppetasemetelt oodatavatele õpitulemustele (Valk, 2008). Kuigi õpiväljunditest lähtuvat kõrgharidusõpet on

Eestis rakendatud alates 2009. aastast (Kõrgharidusstandard, 2008), on korraldatud siiski üsna vähe uuringuid, mis kajastaksid väljundipõhise õppe tegelikku rakendamist. Pilli ja Vanari (2013) hinnangul ei ole üleminek väljundipõhisele õppele olnud kerge, kuid on näha positiivseid trende – õpiväljundite, hindamise ja õpiülesannete omavaheline kooskõla ning seostatus on aastatega paranenud. Seevastu Tammets ja Pata (2013) on leidnud, et õppejõud lähtuvad õpiväljundite sõnastamisel õppeülesannetest ja nende hindamisest, mitte kõrgharidusstandardis ette antud raamistikust. Kuigi nii kõrgharidusstandardis kui ka paljudes haridussüsteemi tulevikutrende käsitlevates kirjutistes rõhutatakse üldpädevuste, nagu kriitilise mõtlemise, eetilise probleemikäsituse, loovuse ja suhtlemisoskuste olulisust, ei ole nende süsteemne arendamine õpiväljundites piisavalt kajastatud (Kumpas-Lenk & Eisenschmidt, esitatud). Udami jt (2015) uuringust aga selgus, et õppijate individuaalse ja sotsiaalse arengu toetamiseks on õpetamis- ja õppimisparadigma vaja muuta õppijakeskseks. Sama eesmärk on seatud „Eesti elukestva õppe strateegias 2020" (Eesti elukestva õppe strateegia, 2014), kus eelolevale lisaks rõhutatakse õpioskuste, loovuse ja ettevõtlikkuse toetamise olulisust.

Üliõpilaste uuringute tulemused viimastest aastatest annavad aimu, kuidas väljundipõhises õppes õpitakse ning millised on üliõpilaste ootused, hinnangud ja valmisolek uuel viisil õppimiseks. Varasematest uuringutest on selgunud, et üliõpilased on rahul kõrgharidusõppega (Kumpas-Lenk, esitatud). Nende rollikujutuses domineerib töökuse, kuulekuse ja korrektsuse mõõde (Vadi, Reino, & Aidla, 2014). Sellest hoolimata on väljundipõhist õpet iseloomustav aktiivne enesejuhitud õppimisviis enamikule suhteliselt võõras (Lea *et al.*, 2003; Pilli, Sammul, Post, Aasjõe, & Kruusamäe, 2013; Roosalu *et al.*, 2013). Õppimisviisidest eelistavad üliõpilased pigem passiivset loengus osalemist (Vadi *et al.*, 2014), kus nad on peamiselt kuulaja rollis. Samas näevad üliõpilased, et õppejõu roll on toetada üliõpilaste õppimist ning edastada õppematerjali aktiivsel ja innustaval viisil (Roosalu *et al.*, 2013). Lea jt (2003) hinnangul on loomulik, et õppijate ettekujutus õppimisest on loengute kuulamine, sest ei olda harjutud õppima teisiti.

Eesti täiskasvanud õppija uuringust ilmnes, et õppijad ei pea õppijakeskset lähenemisviisi ega isiklike õpieesmärkide saavutamist oluliseks (Roosalu *et al.*, 2013). See võib olla tingitud asjaolust, et küllaltki paljudel õppijatel lastakse olla mugavustsoonis, mistõttu ei toimu ka muutusi ega ülemäärast pingutust õppimises (Vadi *et al.*, 2014). Ülikoolide ja rakenduskõrgkoolide uuringust selgus, et õppimisest hoidumine võib aga olla põhjustatud madalatest enesekohastest hinnangutest. Neid tulemusi ei saa võtta kergel käel, sest enesehinnangulistel uskumustel on mõju akadeemilisele edukusele (Täht, Adov, Mägi, & Must, 2013).

Samas ei saa õppijakeskse lähenemisviisi rakendumisel lähtuda ainult õppijate valmisolekust ja oskustest. Esmakursuslaste ja täiskasvanud õppijate uuringust selgus, et õppijatel ei ole olnud piisavalt võimalusi valida õpiülesandeid, mis neile huvi pakuksid (Roosalu *et al.*, 2013). Need tulemused viitavad, et õppimisse aktiivseks panustamiseks ja motivatsiooni tagamiseks ning ennastjuhtiva õppija kujunemiseks ei ole üliõpilastel soodsat keskkonda. Teisalt aga võib põhjuseid otsida õpetamise käsitustest, mis mõjutavad õpetamise eesmärke õppija- või õppejõukeskse lähenemisviisi suunas (Lea *et al.*, 2003; Postareff & Lindblom-Ylänne, 2008). Lea jt (2003) uuringu kohaselt on üliõpilastel kõrgkoolis toimuvate muudatustega lihtsam kaasa minna, kui nad on algusest alates õppeprotsessi loomisesse kaasatud kui partnerid, keda toetatakse uute õppimisviiside rakendamisel ja kellele võimaldatakse kahesuunalist tagasisidet.

Eespool esitatud uurimistulemuste põhjal võib öelda, et üleminek väljundipõhisele õppele ei ole oma eesmärgi kohaselt (õppija individuaalse arengu maksimaalne toetamine) veel rakendunud. Õppijakesksele õppele üleminekul tasub Udami jt (2015) hinnangul keskenduda muutuste kvaliteedile. Rutiku jt (2009) lisavad, et muutuste edukust saab tagada siis, kui sellesse panustavad kõik osalised: nii üliõpilased, õppejõud kui ka kõrgkool.

Õppimisse kaasatus

Õppijakeskne lähenemine õpetamisele toetab õppijate panust ning kaasatust õppimisse (Rytkönen, Parpala, Lindblom-Ylänne, Virtanen, & Postareff, 2012; Zepke, Leach, & Butler, 2014). Õppimisse kaasatus (ingl *student engagement*) mõjutab omakorda üliõpilase õpistrateegiaid, õppimise tulemuslikkust ja väljundeid (Carini, Kuh, & Klein, 2006; Rytkönen *et al.*, 2012). Kuh' (2001, 2009) hinnangul kasutatakse õppimisse kaasatuse terminit enamasti siis, kui räägitakse õppimisse panustamise kvaliteedist (aeg ja energia, mida õppija investeerib eesmärgipäraste tegevuste elluviimisse) ning produktiivsetesse õpitegevustesse kaasatusest (kõrgkoolide pühendumine efektiivsete õpitegevuste kasutamisele).

Kõrgkooli kontekstis on õppimisse kaasatus institutsionaalsete tegurite ja õppija karakteristikute kogum, mille väljund on individuaalne psühholoogiline seisund ehk kaasatud õppija (Baron & Corbin, 2012; Kahu, 2013). Lisaks on õppimisse kaasatus situatiivne ning see võib konteksti ja indiviidi koosmõjus õppeprotsessis aineti varieeruda (Kahu, 2013). Kaasatus ei ole ainult ühepoolne protsess. See on kõrgkooli kui õpikeskkonna, õppejõudude ja üliõpilaste interaktsiooni tulemus (Nystrand & Gamoran, 1991; Zepke *et al.*, 2014). Zepke jt (2014) uuringust selgus, et õppejõudude ja üliõpilaste õppimisse kaasatuse aru-

saamades on nii sarnasusi kui ka erinevusi. Õppijatel kipuvad olema suured ootused õppe suhtes. Õppejõud on nendest ootustest enamasti teadlikud, kuid nad ei pruugi olla teadlikud sellest, kui oluliselt nende tegevused mõjutavad õppijate kaasatust õppimisse.

Kuigi õppimisse kaasatust on laialdaselt uuritud, ei ole tänapäevani saavutatud üksmeelt kaasatuse käsitustes (Baron & Corbin, 2012) ning ei suudeta eristada tegureid, mis mõjutavad õppija kaasatuse lühi- ja pikaajalisi tulemusi (Kahu, 2013). Kahu (2013) järgi võib õppimisse kaasatuse uuringutes eristada nelja lähenemisviisi:

1) käitumuslik, milles keskendutakse õppija käitumisele ja efektiivsetele õpetamistegevustele;
2) psühholoogiline, milles käsitletakse õppimisse kaasatust kui individuaalset ja sisemist protsessi;
3) sotsio-kultuuriline, kus keskendutakse konteksti olulisusele;
4) holistiline, milles püütakse koondada eelnenuid üheks tervikuks.

Praeguses uurimuses keskendutakse käitumuslikule ja psühholoogilisele kaasatusele. Psühholoogilise kaasatusena käsitletakse sisemisi psühholoogilisi protsesse, mis on pidevas muutumises ja mille intensiivsus varieerub. Psühholoogilise kaasatuse puhul eristatakse tunnetuslikku ning seotust, emotsioone ja tungi väljendavat dimensiooni. Tunnetuslik dimensioon hõlmab õppija eneseregulatsiooni ja tõhusate õppimisviiside kasutamist (Fredricks, Blumenfeld, & Paris, 2004). Seotuse dimensioon hõlmab positiivset kõrgkooli reeglite järgimist, õppetöös ja õppekavavälistes tegevustes osalemist ning õppimisse kaasatust (*ibid.*). Emotsioonide dimensiooni korral on õppija motiveeritud, kui ta tunneb rahulolu ja huvi õppimise vastu. Tungi dimensioon kätkeb õppija tahet õnnestuda. Enamasti on psühholoogiline kaasatus lõiming eespool mainitud dimensioonidest. Psühholoogilise kaasatuse tunnetusliku dimensiooni elementide kaudu on mõnel puhul kirjeldatud ka käitumuslikku kaasatust (Kahu, 2013).

Käitumuslik kaasatus väljendub õppetegevustes osalemisena (Gunuc & Kuzu, 2015). Seda mõjutavad nii kõrgkoolide tavad, õppija õppimine kui ka õppejõu õpetamine, mis on seotud õppija rahulolu ja saavutustega, nagu näiteks ülesandele kulunud aeg ning sotsiaalne ja akadeemiline suhtlus. Käitumuslikku kaasatust iseloomustab ka distaalne vaade, näiteks asjaolu, kuidas üliõpilaste õpingute aeg on toetanud neil eluks vajalike laiemate oskuste omandamist, nagu eri rahvuste, kultuuride mõistmine, isiklikud väärtused, panus nii ühiskonda kui ka selle heaolusse (Kahu, 2013).

Kaasatus on konstrukt, mida mõjutavad paljud tegurid. Praeguses uurimuses on tähelepanu all õppeprotsessi tegurid (õpiväljundite arusaadavus, keskkond, õpetamine, õppematerjalid, tagasiside, tööde maht, hindamisülesanded,

sooritatud tööd), õppija motivatsioon ja rahulolu, millest lähtudes püütakse selgitada psühholoogilise ja käitumusliku kaasatuse hinnanguid.

Siinse uurimuse kontekstis osutus probleemseks kaasatuse mõistele eestikeelse vaste leidmine, sest kaasatusele saab läheneda mitmeti ja seetõttu sobib kasutada eri termineid. Kokkuleppeliselt kasutatakse siinkohal käitumusliku kaasatuse puhul vastet *õppimisse panustamine* (väide „Valmistusin hoolikalt loenguteks ja seminarideks, et võtta nendest maksimum") ning psühholoogilise kaasatuse puhul terminit *õppimisse kaasatus* (väide „Mõtlesin, kuidas saaksin kursusel tõhusamalt õppida"). Nii on siinses töös kaasatuse mõistet, mida inglise keeles märgib termin *engagement*, tähistatud sisulise täpsuse huvides kahe eestikeelse terminiga.

Et toetada õppijakeskse õpikäsituse rakendumist väljundipõhise õppe abil, on oluline uurida üliõpilaste ja õppejõudude kogemusi ning välja selgitada, millised on üliõpilaste ja õppejõudude hinnangud õpiväljundite saavutamist toetavatele õppekomponentidele ning milline on õppijate motivatsioon, kaasatus ja valmisolek osaleda väljundipõhises õppes. Seetõttu on praeguse uurimuse eesmärk välja selgitada, kuidas õppejõud ja üliõpilased hindavad väljundipõhise õppe rakendumist õpiväljundite omandamist toetavate komponentide, sh kaasatuse kaudu. Tööd raamivad järgmised uurimisküsimused.

1. Kuidas hindavad üliõpilased ja õppejõud õpiväljundite saavutamist toetavaid õppekomponente, õppijate motivatsiooni, õppimisse kaasatust, õppimisse panustamist ning rahulolu läbitud kursusega?
2. Millised mustrid ilmnevad üliõpilaste ja õppejõudude hinnangutes õppimisse panustamise ja kaasatuse ning õpiväljundite omandamist toetavate õppekomponentide, õppijate motivatsiooni ja rahulolu vahel?

Metoodika

Praegune uuring on osa suuremast uurimusest, mille eesmärk on hinnata väljundipõhise õppe rakendumist kombineeritud disainiga eVALUate'i tagasisideküsimustiku abil, mis peegeldab üliõpilaste õppimist ja õpiväljundite saavutamist (Oliver, Tucker, Gupta, & Yeo, 2008). Enne uuringut on eVALUate'i tagasisideküsimustikku kohandatud ja valideeritud Eesti konteksti arvestades ning tehtud üliõpilaste hinnangute analüüs, mille kohaselt hinnatakse madalaimalt õppimisse kaasatust ja panustamist (Kumpas-Lenk, Tucker, & Gupta, 2014). Praegune uuring keskendub kvantitatiivselt kogutud andmete analüüsile ning eelnenud analüüsi tulemustest lähtuvalt on artikli fookuses väljundipõhise õppe rakendajate ehk üliõpilaste ja õppejõudude hinnangud õpiväljundite omandamist toetavatele komponentidele ning nende komponentide seosed õppijate õppimisse kaasatuse ja panustamise hinnangutega.

eVALUate'i originaalinstrumendis esitatud kaasatuse väidete sisu paremaks edasiandmiseks ning täpsemate eestikeelsete vastete leidmiseks analüüsiti neid Kahu (2013) kaasatuse kontseptsioonide mudeli alusel, võrreldes seejuures väite sisu ühtivust Kahu mudelis kirjeldatuga. Väidete sisuanalüüsist selgus, et valideeritud instrument võimaldab välja selgitada kaasatuse käitumuslikku ja psühholoogilist (tunnetuslikku) poolt.

Valim

Uuringus osalemise kutse saadeti 3669 üliõpilasele ja 113 õppejõule. Üliõpilastelt koguti 1329 analüüsiks sobilikku vastust (vastamise protsent 36,2) ja õppejõududelt 94 vastust (vastamise protsent 83,5). Uurimuse valimi moodustasid bakalaureusetaseme kursuste üliõpilased ja õppejõud kuue Eesti kõrgkooli (kolme rakenduskõrgkooli, kolme ülikooli) kaheksast teaduskonnast või osakonnast (valdkondadest majandus, kunst, tervis ja sotsiaalia). Mitmekesise ja eesmärgipärase valimi tagamiseks paluti uuringusse kaasatud teaduskondade või osakondade kontaktisikutel nimetada igalt õppekavalt erinevaid kursusi (õppeaineid), mille valiku aluseks olid järgmised põhimõtted:

1) osalejate arv: üle 50 üliõpilase ja alla 50 üliõpilasega kursused;
2) õppevorm: nii päeva-, kaug- kui ka õhtuõpe;
3) bakalaureusetaseme kursused;
4) üld- ja erialaained;
5) õppe valdkond (vastavalt uuringus osalevale teaduskonnale või osakonnale).

Kuna uuring toimus paralleelselt kõrgkoolides läbiviidavate ainepõhiste tagasisideküsitlustega, siis valimi moodustamisel jälgiti, et ükski üliõpilane ei peaks andma tagasisidet rohkem kui nelja kursuse kohta.

Mõõtevahend

Eesti konteksti kohandatud ja valideeritud eVALUate'i instrument, mida kasutati uuringus, on loodud ülikooli kvaliteedihindamissüsteemi osana eesmärgiga saada ainetepõhist tagasisidet üliõpilaste õpiväljundite omandamist mõjutavate komponentide kohta. eVALUate'i instrument võimaldab tagasisidet koguda nii õppeprotsessi, motivatsiooni, rahulolu kui ka õppimisse panustamise ja kaasatuse kohta. Instrumendi õppeprotsessi kvaliteedi hindamise (õpiväljundite arusaadavuse, keskkonna, õpetamise, õppematerjalide, tagasiside, tööde mahu, hindamisülesannete, sooritatud tööde), motivatsiooni, rahulolu ja kaasatuse komponentide väljatöötamisel toetusid eVALUate'i autorid mitmetele motivatsiooni-, enesetõhusus-, kaasatus- ja rahuloluteooriate loojate töödele, nt Archer jt, Bandura, Candy jt, Coates, Entwistle, Fenwick, Kuh, Pintrich jt, Ramsden, Schunk, Scott, Zhao (Oliver *et al.*, 2008).

eVALUate koosneb nii avatud kui ka suletud küsimustest. Praegune uuring keskendus kvantitatiivsele osale (11 küsimust), kus üliõpilaste ja õppejõudude hinnangutest lähtudes selgitatakse välja, millised õppeprotsessi komponendid toetavad üliõpilaste õpiväljundite saavutamist (küsimused 1–7), milline on õppijate motivatsioon (küsimus 8) ja rahulolu (küsimus 11) ning millised on hinnangud õppija panusele ja kaasatusele õppimisse (küsimused 9–10). Iga küsimuse all oli kaldkirjas esitatud küsimust selgitav tekst (vt lisa 1).

Nii üliõpilased kui ka õppejõud vastasid samale küsimustikule, kuid õppejõudude ülesanne oli vastata küsimustele õppijatest lähtudes ehk selgitada, kuidas nende hinnangul õppijad õppisid. Igale küsimusele oli võimalik anda hinnanguid viiepunktisel Likerti skaalal.

eVALUate'i instrumendi valideerimisel Eesti konteksti kasutati Raschi analüüsi, millest selgus, et küsimustiku hinnangute skaala töötab ning küsimused mõõdavad õppimise ja õpetamise eri komponente. Väidete reliaabluse määramiseks leitud Cronbachi alfa väärtus ($\alpha = 0{,}92$) näitas, et tegemist on usaldusväärse instrumendiga, mida omakorda kinnitas kõrgkoolidepõhine lisaanalüüs (Kumpas-Lenk *et al.*, 2014).

Protseduur

Uuringu eel lepiti kõrgkoolidega kokku uuringu valim ja plaan ning kõrgkooli kontaktisik, kes edastas uurijale uuringu tegemiseks vajalikud andmed (kursuste nimed, õppejõudude nimed, kursuste mahud, õpiväljundid, kursustel osalenud üliõpilaste kontaktandmed). Uuring tehti elektroonilises keskkonnas LimeSurvey, mille kaudu edastati kursuse lõppemise järel umbes ühe nädala jooksul üliõpilaste ja õppejõudude e-posti aadressile uuringus osalemise kutse. See sisaldas infot selle kohta, et uuringus osalemine on vabatahtlik ja saadud andmeid kasutatakse vaid üldistatud kujul. Küsimustik oli vastamiseks avatud kolm nädalat ja selle aja jooksul saadeti mittevastanutele meeldetuletusi uuringus osalemise kohta. Vastamisperioodi järel koostati kõrgkoolidele ja õppejõududele üldistatud andmetega koondid. Nende kursuste kohta, kus vastanuid oli vähem kui kolm, koondeid ei koostatud, et tagada üliõpilaste vastuste anonüümsus.

Andmeanalüüs

Juhindudes eVALUate'i originaalinstrumendi autorite analüüsimissuundade soovitustest (Oliver *et al.*, 2008), arvutati uuringus osalevate kõrgkoolide õppejõudude ja üliõpilaste arvamuste kõrvutamiseks nõusolekut väljendavate hinnangute (hinnangud „Täiesti nõus" ja „Pigem nõus") kogusumma protsent. Oliveri jt (2008) uuringu kohaselt vajavad alla 80% jäävad hinnangud tähele-

panu, mistõttu on need andmed esile tõstetud (vt tabel 1). Edaspidises analüüsis eemaldati skaalapunkti „Ei oska öelda" hinnangud ning seetõttu kasutati analüüsimiseks neljapunktist Likerti skaalat, kus 1 – „Ei ole nõus" ja 4 – „Täiesti nõus". Andmeid töödeldi statistikapaketiga SPSS 23.0. Õppejõudude ja üliõpilaste hinnangute vaheliste statistiliselt oluliste erinevuste väljaselgitamiseks kasutati mitteparameetrilist Mann-Whitney U-testi. Testi tulemustest ilmnenud erinevuste illustreerimiseks esitati väidete keskmised ja risttabelid. Et selgitada õppimisse panustamise ja kaasatuse ning teiste õpiväljundite omandamist toetavate komponentide vahelisi seoseid, tehti regressioonanalüüs Backward-meetodil.

Tulemused

Üliõpilaste ja õppejõudude hinnangute kohaselt (vt tabel 1) toetavad õpiväljundite saavutamist järgmised õppeprotsessi komponendid: õpiväljundite selgus, õppetöö maht, õppematerjalid, õpikeskkond, sooritatud tööd, hindamisülesanded, õpetamine ja tagasiside. Samuti ilmnes, et üliõpilased olid enamasti motiveeritud õppima ja rahul kursusel saadud õpikogemusega. Seevastu hinnangud üliõpilaste enese panusele ja kaasatusele õppimisse (väited „Valmistusin hoolikalt loenguteks ja seminarideks, et võtta nendest maksimum"; „Mõtlesin, kuidas saaksin kursusel tõhusamalt õppida") olid võrreldes teiste hinnangutega madalamad (vahemik 69,2–76,0%).

Tabel 1. Õppejõudude ja üliõpilaste hinnangud õpiväljundite saavutamist toetavatele komponentidele

	Õppeprotsessi komponendid								Õppijate motivatsioon	Õppimisse panustamine	Õppimisse kaasatus	Rahulolu
	1. Õpiväljundite arusaadavus %	2. Õpikeskkond %	3. Õppematerjalid %	4a. Sooritatud tööd %	4b. Hindamisülesanded %	5. Tagasiside %	6. Tööde maht %	7. Õpetamine %	8. Õppijate motivatsioon %	9. Valmistumine õppetööks %	10. Õppimise efektiivsus %	11. Rahulolu %
Üliõpilased	90,1	90,9	90,2	90,4	88,0	81,9	85,9	89,2	86,5	**76,0**	**71,6**	86,9
Õppejõud	94,7	93,6	96,8	95,7	92,6	91,5	79,8	95,7	91,5	**69,2**	**71,3**	83,0

Mann-Whitney U-testi tulemustest selgus, et õppejõudude ja üliõpilaste hinnangute vahel on statistiliselt olulised erinevused hindamisülesannetes (p = 0,025; U = 48 741), õppijate motivatsioonis (p = 0,003; U = 49 301) ja rahulolus (p = 0,042; U = 47 719). Ülejäänud õpiväljundite saavutamist toetavate komponentide poolest ei erinenud õppejõudude ja üliõpilaste hinnangud statistiliselt olulisel määral. Õppejõudude ja üliõpilaste hinnangute erinevuste illustreerimiseks koostati risttabel (vt tabel 2).

Tabel 2. Erinevused õppejõudude ja üliõpilaste hinnangutes

	Täiesti nõus %	Pigem nõus %	Pigem ei ole nõus %	Ei ole nõus %
Üliõpilased				
Hindamisülesanded	55,4	36,9	5,5	2,2
Õppijate motivatsioon	52,0	36,3	8,1	3,6
Rahulolu	49,6	38,8	8,0	3,6
Õppejõud				
Hindamisülesanded	65,9	33,0	0,0	1,1
Õppijate motivatsioon	29,7	64,8	4,4	1,1
Rahulolu	32,5	61,4	6,0	0,0

Analüüsist järeldub, et õppejõudude hinnangud hindamisülesannetele (M = 3,64) on kõrgemad kui üliõpilastel (M = 3,45). Samas hindavad üliõpilased enda motivatsiooni õppida kõrgemalt (M = 3,37) kui õppejõud (M = 3,23) ning üliõpilaste hinnangul on nad läbitud kursusega rahulolevamad (M = 3,34), kui õppejõud seda arvavad (M = 3,27).

Kuna tabeli 1 andmetest selgus, et nii üliõpilaste kui ka õppejõudude hinnangud õppimisse panustamisele ja kaasatusele on võrreldes teiste näitajatega madalamad, leiti regressioonanalüüsi toel, mis tunnused kirjeldavad ja prognoosivad õppija panuse ning kaasatuse väärtusi. Seejuures tehti regressioonanalüüs eraldi nii õppejõudude kui ka üliõpilaste valimi põhjal. Sõltuvate tunnuste (õppimisse panustamise ja õppimisse kaasatuse) seosed sõltumatute tunnustega (kõik ülejäänud muutujad) on esitatud tabelites 3 ja 4.

Tabel 3. Õppimisse panustamise hinnangute seosed õpiväljundite omandamist toetavate teguritega

Üliõpilased, $R^2 = 0{,}380$			Õppejõud, $R^2 = 0{,}661$		
Muutujad	*β*	*p*	Muutujad	*β*	*p*
Õppimisse kaasatus	0,421	0,000	Õppimisse kaasatus	0,507	0,000
Õppijate motivatsioon	0,264	0,000	Tööde maht	0,309	0,002
Tööde maht	0,112	0,000	Õpikeskkond	0,182	0,031
			Õppijate motivatsioon	0,179	0,082
			Hindamisülesanded	–0,186	0,053

Determinatsioonikordaja põhjal saab üliõpilaste hinnangutest lähtudes väita, et õppimisse kaasatuse, õppijate motivatsiooni ja tööde mahu tulemustega on võimalik kirjeldada ligikaudu 38% üliõpilaste õppimisse panustamise komponendi tulemuste variatiivsusest ($R^2 = 0{,}380$, $F = 0{,}349$, $p < 0{,}001$). Õppejõudude mudeli muutujad ühtivad osaliselt üliõpilaste mudeli omadega: 66% ulatuses õppejõudude tajutud üliõpilaste õppetöösse panustamise hinnangute variatiivsusest ($R^2 = 0{,}661$, $F = 0{,}220$, $p < 0{,}001$) ennustavad peamiselt üliõpilaste õppimisse kaasatus, tööde maht ja õpikeskkond. Väiksemate osakaaludega muutujate tulemused on toodud tabelis 3.

Tabel 4. Õppimisse kaasatuse hinnangute seosed õpiväljundite omandamist toetavate teguritega

Üliõpilased, $R^2 = 0{,}328$			Õppejõud, $R^2 = 0{,}644$		
Muutujad	*β*	*p*	Muutujad	*β*	*p*
Õppimisse panustamine	0,459	0,000	Õppimisse panustamine	0,456	0,000
Õppijate motivatsioon	0,124	0,000	Õppijate motivatsioon	0,270	0,007
Rahulolu	0,111	0,005	Rahulolu	0,243	0,005
Õpiväljundite arusaadavus	0,098	0,003			
Tagasiside	0,080	0,021			
Õppematerjalid	–0,096	0,005			
Õpetamine	–0,085	0,031			
Tööde maht	–0,075	0,016			

Determinatsioonikordaja põhjal saab väita, et õppetöösse panustamise, õppijate motivatsiooni ja rahulolu väidete tulemustega on võimalik kirjeldada üliõpilaste õppimisse kaasatuse tulemuste variatiivsusest ($R^2 = 0{,}328$, $F = 0{,}144$, $p < 0{,}001$) ligikaudu 33% ja õppejõudude hinnangutega üliõpilaste õppimisse kaasatusele ligikaudu 64% ($R^2 = 0{,}644$, $F = 0{,}151$, $p < 0{,}001$). Nii õppejõudude kui ka üliõpilaste hinnangute regressioonimudelitest selgus, et õppimisse kaasatuse komponendi peamisteks kirjeldajateks on õppimisse panustamise, õppijate motivatsiooni ja rahulolu hinnangute tulemused. Õppimisse kaasatuse hinnangutega seotud sõltumatute muutujate terviklik nimekiri ja tulemused on toodud tabelis 4.

Arutelu

Üliõpilaste ja õppejõudude hinnangute kohaselt toetab väljundipõhine õppeprotsess üliõpilastel õpiväljundite saavutamist, lisaks on üliõpilased motiveeritud õppima ja rahul õppeainetes saadud õpikogemustega. Seevastu hinnangud üliõpilaste enese panusele ja kaasatusele õppimisse olid võrreldes teiste hinnangutega madalamad, mis viitab, et väljundipõhine õpe ei täida praegu veel oma eesmärki toetada õppijakeskse lähenemisviisi rakendamist. Ka teised uuringud kinnitavad, et üliõpilased on motiveeritud ja rahul oma õpingutega, kuid ei panusta piisaval määral sellesse, et nad oleksid kaasatud ning võtaksid ise aktiivse rolli ja vastutuse oma õppimise eest (Pilli *et al.*, 2013; Postareff & Lindblom-Ylänne, 2008; Roosalu *et al.*, 2013; Rutiku *et al.*, 2009; Udam *et al.*, 2015; Vadi *et al.*, 2014).

Üliõpilaste kaasatuse, koostöö ja akadeemilise edasijõudmise tagamiseks on oluline alustada õppijate toetamist ülikooliõpingute esimesest päevast alates (Rytkönen *et al.*, 2012). Kuh' jt (2008) soovitusel peaksid õppejõud andma õppijatele rohkem ülesandeid, mis nõuavad neilt vastutuse võtmist. Suurem vastutus igapäevastes tegevustes haarab õppijaid õppimisse, nad väärtustavad seda, millesse on aega panustanud, ja seega pühenduvad rohkem õppimisele. Peale õppijatele vastutuse andmise rõhutab Kahu (2013), et oluline on suurendada nende teadlikkust erinevatest muutujatest, mida nad saavad ise kontrollida, et olla rohkem kaasatud. Roosalu jt (2013) täiendavad seda seisukohta väitega, et õppijate isiklike õpieesmärkide seadmisele ja saavutamisele tasub tähelepanu pöörata, toetamaks õppijakeskse lähenemisviisi edukamat rakendumist. Õppija autonoomia ja vastutus on nende soovituses kesksed märksõnad. Neid soovitusi kinnitab isemääramisteooria, mille raames määratletakse autonoomiat kui inimese tegutsemist oma tahte ja valikute kohaselt. Autonoomiale vastandub kontroll, kus välised jõud sunnivad inimest kindlal viisil käituma (Deci & Ryan, 2013).

Varasemad uuringud on näidanud, et õpetajate ja õppijate hinnangud õppimisele on nende arusaamade ja individuaalsete kogemuste tõttu erinevad (Virtanen & Lindblom-Ylänne, 2010). Praegusse uuringusse kaasatud õppejõudude ja üliõpilaste hinnangute võrdlusest ilmnes, et need erinesid kolme õpiväljundite omandamist toetava komponendi poolest. Selgus, et üliõpilaste hinnangud õpiväljundite saavutamist toetavatele hindamisülesannetele olid madalamad kui õppejõududel. Samas hindasid üliõpilased enda motivatsiooni saavutada kursuse õpiväljundid ning rahulolu kursusega õppejõududest oluliselt kõrgemalt. Ülejäänud õpiväljundite omandamist toetavate komponentide puhul üliõpilaste ja õppejõudude hinnangud statistiliselt olulisel määral ei erinenud, mis viitab, et üliõpilaste kui õppijate kogemused ja õppejõudude kui õppeprotsessi juhtide kogemused on sarnased ning kinnitavad teineteise hinnanguid.

Nii õppejõudude kui ka üliõpilaste hinnangutest ilmnes, et õppetöösse panustamist prognoosib eelkõige õppijate kaasatus õppimisse, nende motivatsioon ja kursuse jooksul tehtud tööde maht. Õppimisse kaasatust ennustasid aga mõlemal rühmal õppijate panustamine õppimisse, õppijate motivatsioon ja rahulolu kursusega. Kahu (2013) kaasatuse mõjurite ja tulemuste kontseptsioonist lähtudes on need tulemused ootuspärased. Samuti kinnitavad varasemad uuringud kaasatuse tugevat seost nii kaasatuse eri dimensioonide, õppijate motivatsiooni, rahulolu kui ka tööde mahu ja õppetööks valmistumisega (*ibid.*). Seega tasub õppimisse panustamisel ja kaasatuse tõhustamisel pöörata tähelepanu just eespool välja toodud aspektidele. Et suurendada õppijate kaasatust ja õppimisse panustamist ning välja selgitada takistavad põhjused, soovitame uurida kaasatust kui terviklikku konstrukti.

Kokkuvõte

Juba mõnda aega on väljundipõhist õpet Eesti kõrgkoolides rakendatud, sh on õppekavad ja kursuseprogrammid väljunditele üles ehitatud, kuid see ei anna alust väita, et sellega on toimunud paradigmaatiline üleminek väljundipõhisele ehk õppijakesksele õppeprotsessile. Kuigi praegusest uuringust selgus, et õppimisse kaasatus ja panustamine on aspektid, mis väljundipõhise õppe juures vajavad tähelepanu, siis tuginedes Carini jt (2006) uurimusele, tasub silmas pidada, et õppimist väljundipõhises õppes tuleb vaadelda tervikuna.

Saadud tulemuste ja loetud kirjanduse põhjal saab esile tuua kaks peamist küsimuste ringi. Esimene seostub õppejõudude ja institutsionaalse kontekstiga, kus õppejõud töötab. Nagu näitab ka praegune uuring, vajab õppija vajadustest lähtuva õppeprotsessi kujundamine, kus kõik õppeprotsessi komponendid (õpiväljundid, eesmärgid, ülesanded, iseseisvad tööd, õpetamine, tagasiside, hindamine) on omavahel kooskõlas, laiemat tähelepanu. Suure mõjuga on

kõrgkooli kultuur, õigusaktid, õppejõudude töökorraldus ja tunnustamine. Kuigi Eesti kõrgkoolide õppejõududel on olnud eri programmide raames palju koolitusvõimalusi, peab koolitusega kaasnema ka tugi omandatud teadmiste rakendamiseks. Siinkohal on toimunud edasiminekuid, näiteks on kõrgkoolides sõlmitud õpetamisprintsiipide kokkuleppeid, kujunenud on õppejõudude õpirühmad, kes vastastikku üksteise loengutes osalevad ja tagasisidet annavad. Muutused õpikäsituses toimuvad siis, kui enamik õppejõude lähtub õppe kavandamisel üliõpilastest, kuid selles protsessis ei saa õppejõudu üksi jätta.

Üks kriitilisemaid küsimusi on hindamine, milles ka õppejõudude ja üliõpilaste hinnangud korraldatud uuringus oluliselt erinesid. Väljundipõhises õppes on hindamine aga veelgi keerulisem. Õppejõul tuleb õpiväljundi põhjal otsustada, kuidas ja milliste meetodite toel määratud väljundit hinnata, ning alles seejärel saab ta kindlaks määrata hindamiskriteeriumid. Üks võimalus on kujundada hindamismeetodid ja -kriteeriumid üliõpilastega koos. See aitab ennetada üliõpilastepoolseid arusaamatusi hindamiskriteeriumite tõlgendamisel, aga annab ka õppejõududele kindluse, et üliõpilased on hindamiskriteeriumitest teadlikud ning seetõttu rohkem valmis õppesse panustama.

Teine küsimuste ring on seotud üliõpilaste ja nende valmidusega võtta enda õppimise eest vastutust ning panustada ise oma õppimise planeerimisse ja iseseisvalt õppida. Selleks peavad üliõpilastel kujunema vajalikud õpioskused, algatusvõime, ettevõtlikkus jt oskused, mis on seotud eneseregulatsiooni ja -tõhususega. Erinevalt varasemast peaks tänapäeva õpikeskkond võimaldama õppijal võtta suuremat vastutust ning pakkuma rohkem võimalusi oma õppimisvalikute üle otsustada. Õppeprotsess peaks olema paindlikum, et õppija saaks teha enda õppimist toetavaid valikuid, sest autonoomsed õppijad on valmis ise rohkem panustama. Õppimisse panustamist ja kaasatust saaks suurendada sellega, kui võimaldada üliõpilastel seada õppejõu määratud õpiväljunditele lisaks iseenda jaoks olulisi õpiväljundeid ja nendest lähtuvaid ülesandeid, mis toetavad väljundi saavutamist. Sealhulgas peaksid üliõpilased regulaarselt hindama ja tõhustama oma õppimist, mille soosimiseks võib kasutusele võtta õpianalüütika vahendeid, mis võimaldavad õppijal koguda tagasisidet enda õppeprotsessi panustamise kohta ja õppejõul saada ülevaadet õppija arengust.

Praegusel uuringul on ka mitmeid piiranguid, mida tasub edaspidi arvesse võtta. Esmalt, tulemuste üldistamisel on vaja silmas pidada, et õppimisse kaasatus on distsipliiniti kvalitatiivselt erinev (Brint, Cantwell, & Hanneman, 2008), mistõttu distsipliinideülesed instrumendid ei pruugi viia soovitud tulemusteni (Kahu, 2013). Uuringus kasutatud kursuse tagasiside küsimustik võimaldab saada ülevaadet õppe komponentidest, mis toetavad õpiväljundite omandamist, ning anda tagasisidet komponentide kohta, millele tuleb tähele-

panu pöörata. Teisalt tuleb siiski arvestada, et õppimisse kaasatuse kohta terviklike järelduste tegemiseks ei piisa vaid kahe kaasatuse aspekti uurimisest, sest kaasatusele peaks selle dünaamilise ja situatiivse seisundi tõttu lähenema sügavuti (Kahu, 2013). Õppimisse kaasatuse põhjalikumaks uurimiseks tuleks järgnevalt kasutada kvalitatiivseid meetodeid, mis võimaldavad tabada õppijate kogemuste mitmekesisust. Samuti tasub kaaluda pikiuuringuid, kui soovitakse mõista õppimisse kaasatuse dünaamikat. Kuna kõrgkooli kontekstil on õppimisse kaasatusele oma mõju (Baron & Corbin, 2012; Rutiku *et al.*, 2009), siis selleks, et tõhustada konkreetses kõrgkoolis õppija kaasatust, tuleks uurida selle institutsiooni eri tegureid, nagu õppekavade ülesehitus, õppeprotsessi korraldus, õppejõudude arengu toetamine.

Kahu (2013) kontseptsioonile tuginedes võib öelda, et õppija kaasatuse tõhustamiseks on mitmeid viise alates psühhosotsiaalsetest mõjuteguritest ja lõpetades kaudsete akadeemiliste tulemustega. Vastutus õppimisse kaasatuse eest lasub aga kõigil osalistel: nii üliõpilasel, õppejõul, kõrgkoolil kui ka konteksti loojal.

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Lisa 1. Eesti konteksti valideeritud eVALUate'i kursuse tagasiside küsimustik

Kirjeldava statistika jaoks paluti üliõpilastel nimetada oma õppevorm (päevane, õhtune, kaugõpe), sugu, vanus ja loengutes osalemise sagedus (mitte ühelgi, üksikutel, pooltel, enamikul, kõikidel) ning õppejõududel paluti nimetada oma vanus, sugu ja tööstaaž aastates.

Uuringu kvantitatiivses osas (küsimused 1–11) oli vastajail võimalik anda hinnanguid viiepunktisel Likerti skaalal: „Täiesti nõus", „Pigem nõus", „Pigem ei ole nõus", „Ei ole nõus", „Ei oska öelda". Et lihtsustada küsimuste mõistmist, oli kaldkirjas esitatud küsimust selgitav tekst.

Palun hinda läbitud kursust järgmistest väidetest lähtudes. Väidete selgitused on toodud allpool.

1. Kursuse õpiväljundid olid selged ja arusaadavad.
Õpiväljundid kirjeldavad teadmisi, oskusi või hoiakuid, mida üliõpilane kursuse läbimise järel on omandanud (st teab, mõistab või oskab). Oodatavaid õpiväljundeid on kirjeldatud aineprogrammis ja õppejõud tutvustab neid kursuse alguses.

2. Õpikeskkond toetas õpiväljundite omandamist.
Õppe toimumise keskkonnaks võivad olla loengud, praktikumid, seminarid, e-õpe ja iseseisev õpe.

3. Kursuse õppematerjalid toetasid õpiväljundite saavutamist.
Õppematerjalid on näiteks paberil jaotusmaterjalid, multimeedia ja e-õppe materjalid, internetiallikad, raamatud, tehnilised vahendid.

4a. Kursuse käigus sooritatud tööd toetasid õpiväljundite omandamist.
Kursuse tööde all mõistetakse õppejõu antud ülesandeid, milleks võib olla iseseisev töö, grupitöö ja erinevad hindamisülesanded (eksam, arvestus jm).

4b. Õppejõu antud ülesannetega hinnati õpiväljundite saavutatust.
Hinnatavad ülesanded on need, mis lõpevad kas arvestuse, hinde või õppejõu tagasisidega, nt eksam, arvestustöö, kodutöö, grupitöö, kirjalik töö. Hindamiseks antud ülesanded mõõdavad otseselt üliõpilase õpiväljundite saavutatust.

5. Õppejõu antud tagasiside toetas kursuse õpiväljundite omandamist.
Tagasiside annab võimaluse saada informatsiooni ja hinnanguid tehtud tööle. Tagasiside võib olla nii kirjalik kui ka suuline.

6. Kursuse jooksul tehtud töö maht oli õpiväljundite saavutamiseks piisav.
Kursuse tööde alla võib lugeda kõik kursuse tarbeks tehtud tööd. See hõlmab auditoorseid loenguid, grupitöid, iseseisvat õppimist, hindamisega seotud ülesanded jne.

7. Õpetamine toetas õpiväljundite omandamist.
Kvaliteetse õpetamise tagavad entusiastlikud ja oma valdkonda põhjalikult tundvad õppejõud, kes suhtlevad tudengitega positiivselt õppimist ja õpetamist soodustavas keskkonnas.

8. Olin motiveeritud saavutama kursusele seatud õpiväljundeid.
Motiveeritus tähendab soovi ja tahet pingutada mis tahes eesmärkide täitmiseks.

9. Valmistusin hoolikalt loenguteks ja seminarideks, et võtta nendest maksimum.
Valmistusin õppetööks loengutes, seminarides või praktikumides põhjalikult. Otsisin lisalugemist, tegin õpitust vahekokkuvõtteid, töötasin läbi õppejõu pakutud informatsiooni ja allikad.

10. Mõtlesin, kuidas saaksin kursusel tõhusamalt õppida.
Võtsin aega, et mõelda, kuidas ma saan õppida efektiivsemalt.

11. Üldiselt olen selle kursusega rahul.
Kursus pakkus kvaliteetset õppimiskogemust.

12. Mis soodustas õpiväljundite omandamist?

13. Mis takistas õpiväljundite omandamist?

14. Soovitused ja arvamused kursuse parendamiseks.

Learning in outcome based education – does it lead to student engagement?

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Summary

Outcome based education (OBE) has been at the centre of European higher education reforms since the Bologna process in 1999 and has been implemented in Estonia since 2009. The knowledge, skills and attitudes expressed in the learning outcomes are key tools in supporting the implementation of student-centred learning. Although, the aim of the learning outcomes is to maximise support for students' individual development, it has emerged that OBE in Estonia is not fully practiced or implemented in the expected ways (Pilli & Vanari, 2013; Tammets & Pata, 2013; Udam et al., 2015). Moreover, learning outcomes are often seen as a bureaucratic burden that fulfils the aims of managerial and auditing processes, but not the actual needs of students (Hussey & Smith, 2008). Most of the research within this topic is focusing on the challenges at the institutional levels, but there is little research that would reveal how students and teachers are experiencing the changes in the higher education area (Hadjianastasis, 2016) and whether these changes fulfil teachers aims in supporting students' personal development.

The research conducted in Estonian higher education show that there are problems, but also positive examples in implementing OBE. Pilli and Vanari (2013) acknowledged that the transition to the OBE has not been easy, but over the years, a positive trend in the alignment of learning outcomes, assessment tasks and learning assignments has emerged. Moreover, the external quality assessors' evaluations of the higher education institutions have pointed out that the challenge in today's Estonian higher education resides in transforming the teaching and learning paradigm into student-centered learning (Udam et al., 2015).

Although there are many positive steps taken towards student-centred OBE we have to acknowledge that the changes in learning and teaching paradigm take time (Rutiku et al., 2009). Recent studies show that active, self-regulated learning is not so common among Estonian students (Kumpas-Lenk, ***in review***; Pilli et al., 2013; Roosalu et al., 2013; Vadi et al., 2014). Overall, students are

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satisfied with their learning experiences, the lack of major obstacles in achieving the intended learning outcomes (Kumpas-Lenk, *in review*), and their educational comfort zone (Vadi et al., 2014). Additionally, they do not feel the need for the implementation of student-centred learning or achieving personal learning goals (Roosalu et al., 2013), nor are they engaged or put any effort into their learning (Kumpas-Lenk et al., 2014). The results also show that students did not have enough opportunities to choose how to learn and to take responsibility of their learning. The research regarding Estonian students' learning illustrates how the changes have been put into practice and accepted.

The results of previous investigations based on the eVALUate student survey show that changes towards student-centred learning are not apparent in the latest surveys, because the agreement percentages of student engagement items are the lowest (Kumpas-Lenk et al., 2014). Research has shown that student engagement is the key between student-centred learning and achieving learning outcomes (Carini et al., 2006; Zepke et al., 2014) that are one of the universities quality assessment measures (Kahu, 2013). According to Kuh (2009), student engagement is mostly used when we talk about the quality of the students' time, the effort that they invest in reaching their goals, and the universities time and effort devoted in creating productive and engaging learning experiences (Kuh, 2001, 2009). Although, student engagement has been extensively studied, there is still confusion on how to clarify the construct of engagement. Kahu (2013) has systemised the research regarding student engagement approaches, which are: the behavioural perspective; the psychological perspective; the socio-cultural perspective and a holistic perspective. The proposed conceptual framework of student engagement acknowledges the importance of the student and the institution while recognising the critical influence of the socio-cultural context. In this study, we use Kahu's (2013) conceptual framework as the basis of characterising student engagement. In detail, we look at the aspects of the behavioural and psychological perspectives in the context of OBE.

In order to find out how OBE has been practiced, we need to understand how study processes have been planned and how students perceive these processes. Next to this, we cannot forget those who are at the centre of these processes – how motivated and ready are students for student-centred learning. The aim of this paper is to find out how students and teachers perceive the implementation of OBE by determining the factors, which aid the students' achievement of the intended learning outcomes. This study seeks answers to the following research questions:

1. According to students and teachers perceptions, how are the factors of learning process, student motivation, engagement and satisfaction supporting students in achieving the intended learning outcomes?

2. What patterns emerge in students' and teachers' perceptions between student engagement and the components that support students' achievement of the intended learning outcomes?

This study was one part of a larger investigation, where a mixed type student evaluation survey, called eVALUate (Oliver et al., 2008), adapted in the Estonian context, was used to determine students' and teachers' experiences of students learning and achievement of the intended learning outcomes in their unit. The evaluation survey comprises 14 items, which ask students' perceptions on a categorical scale (strongly agree, agree, disagree, strongly disagree and unable to judge) regarding what supported their achievement of unit learning outcomes (Items 1–7), what they bring to their learning in terms of their motivation and engagement (Items 8–10), how satisfied they are with the studied unit (Item 11), what helped and hindered their learning with suggestions for improving the studied unit (Items 12–14) (Kumpas-Lenk et al., 2014). This study focuses on the quantitative section of the student evaluation survey (Items 1–11).

The participants were recruited from eight faculties (fields of economy, arts, health, social sciences) from six Estonian higher education institutions. A total of 1329 student surveys and 94 teaching surveys suitable for analysis were received (students' response rate = 36.2%, teachers' response rate = 83.2%).

To find out student and teacher perceptions about students' achievement of the intended learning outcomes, an aggregated percentage agreement (sum of the percentage of responses "Agree" and "Strongly agree"; "Achieved fully" and "Achieved mostly") was calculated and presented. In further analysis, "Uncertain" responses were eliminated and the analysis was carried out based on the 4-points Likert-type scale from "Strongly disagree" (1) … "Strongly agree" (4). To determine statistically significant differences among teacher' and student' perceptions a non-parametric Mann-Whitney U-test was calculated by using SPSS Statistics Version 23.0. Average and means were calculated to illustrate the aspects where significant differences emerged. For explaining the results of student engagement items and aspects that support students' achievement of the learning outcomes a regression analysis was performed using the Backward method.

The results show that the components in the learning process (clear learning outcomes, experiences, resources, assessment, feedback, workload, teaching methods), student motivation and satisfaction support students in achieving the intended learning outcomes. However, student and teacher perceptions of the engagement items were much lower, which indicates that OBE is not fulfilling its aims in supporting student-centred learning where students take an active role and responsibility for their learning experiences. The analysis also showed that students and teachers experience students' learning in OBE

similarly, most of the teacher and student responses were not statistically different, except the assessment tasks, motivation and satisfaction items.

In order to explain the low agreement of. student engagement items a regression analysis was conducted. The aim was to find out which components predict students' best use of the learning experiences (Item 9: *I prepare for the lectures, seminars in order to take the maximum use out of these*) and effective learning (Item 10: *I thought about how to learn more effectively in this unit*). The analysis of teacher responses showed that effective learning, workload and the learning environment predict the results of students' best use of the learning experiences and best use of the learning experiences, motivation and satisfaction predicted the results of effective learning. The analysis of student responses was similar and therefore effective learning, motivation and workload predicted the results of students' best use of the learning experiences. The results of the best use of the learning experiences, motivation and satisfaction items predicted the results of the effective learning.

It is evident that the change in teaching and learning paradigm with the help of OBE has not been fully put into practice. For engaging students, teachers and students should work as partners and focus on creating an environment that fully supports students' self-directed learning, use active and engaging learning methods and to take responsibility for their learning.

Keywords: outcome based education, student engagement, achievement of the intended learning outcomes in higher education, students and teachers' perceptions.

III

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Does the design of learning outcomes matter from students' perspective?

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ABSTRACT

Learning outcomes have gained more attention in the development of higher education course unit programmes. This study sought to understand how the design of learning outcomes relates to students' perceptions of their motivation, satisfaction, engagement and achievement of the learning outcomes. The learning outcomes from 78 course units were coded to reflect the level of cognitive demand according to Bloom's Taxonomy and the attended students (n = 1329) were surveyed regarding their perceptions of their achievement of the learning outcomes. The results indicated that the lowest four levels of Bloom's Taxonomy were most commonly used in the design of learning outcomes, the highest level was not used at all. The levels of learning outcomes related to students' perceptions of their achievement of learning outcomes, motivation, satisfaction and engagement. The results demonstrated that students were more likely motivated, satisfied, engaged to achieving learning outcomes, which were designed at higher levels of cognitive demand.

1. Introduction

"What was I supposed to gain from this?" is a question students frequently ask after finishing their course unit[1], reflecting students' experiences in the current Estonian higher education. Learning outcomes - the "what" that students are supposed to gain from any course unit, are considered to be the starting point of the process of planning the potential teaching methods and assessments, which lead to the desired learning outcomes (Biggs & Tang, 2011).

Learning outcomes are the skills, knowledge or attitudes students ought to develop as a result of their learning (Biggs & Tang, 2011). A design of learning outcomes, which focuses on the development of students, helps universities to provide more individualised learning paths for diverse groups of learners, supports economic and labour market needs, is valuable for improving the quality of higher education (Leuven Communiqué, 2009) and supports the implementation of student-centred learning paradigm (Adam, 2008). Although this vision of learning outcomes is used as the foundation for the national policies and quality frameworks implemented around Europe since the Bologna process in 1999 (Cedefop, 2017), there is little evidence of the benefits resulting from the implementation of learning outcomes in these suggested ways. Brooks, Dobbins, Scott, Rawlinson, and Norman (2014), for example, argue that there is still lack of convincing evidence for learning outcomes leading to student-centred learning. Their study revealed that learning outcomes help students to focus their learning, but it does not necessarily mean that learning outcomes support students in being active, autonomous, responsible, and self-directed learners (Brooks, Dobbins, Scott, Rawlinson, & Norman, 2014). Similarly, it is pointed out that while different verbs, denoting the required depth of thinking and abilities of students, can be used in designing the learning outcomes, it is not given that a particular design will inevitably add any expected value to students' learning (Cedefop, 2017). There is a substantial gap in the literature which highlights the lack of evidence regarding whether the design of learning outcomes has any effect on students learning.

To address this issue, the current paper aims at contributing to the understanding of how the design of learning outcomes relates to students' perceptions of their achievement of the intended learning outcomes (henceforth learning outcomes), their motivation, satisfaction and engagement of the studied course units in the Estonian higher education settings.

2. Learning outcomes political and educational perspective

Although learning outcomes have been implemented for decades, researchers are continuously debating whether learning outcomes

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[1] 'course unit' according to the ECTS Users' Guide (2015) denotes a self-contained, formally structured learning unit that is part of a curricula and has explicit set of learning outcomes, defined learning activities and appropriate assessment criteria. This is equivalent to the term 'course' used in Northern America and to the term 'subject' used in the Estonian system.

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primarily support the educational process or if they exist simply to satisfy bureaucratic needs (Brooks et al., 2014; Hadjianastasis, 2017; Hussey & Smith, 2008).

The underlying idea of designing learning outcomes is to clarify the goals of the learning process from students' perspective. The Bologna process policies regulate the use and the design of learning outcomes, but also aim at measuring how successful the implementation of its regulations has been (Murtonen, Gruber, & Lehtinen, 2017). Therefore, it has been argued that learning outcomes tend to serve universities as easily measurable markers of quality assurance (Hussey & Smith, 2008). Hence, the obligation of designing learning outcomes in the context of the quality assurance has been criticised as adding bureaucratic burden to teachers (Hussey & Smith, 2008; Murtonen et al., 2017) and is seen as a monitored indicator of academic teaching ability (Seema, Udam, Mattisen, & Lauri, 2017). This might explain why it is asserted that imposing national standards (e.g. qualifications frameworks) for how learning outcomes ought to be used, may limit teachers' and higher education institutions' autonomy, creativity and enthusiasm (Melton, 1996).

However, from the educational perspective, it is clear that learning outcomes, irrespective of whether they are designed in accordance with general policies or not, are just words on paper, unless they reflect the actual activities undertaken in learning situations. The idea is captured in Biggs' (2014) concept of constructive alignment, which states that in order to engage students, the teaching- and assessment methods must be planned to constructively enable the achievement of the designed learning outcomes. The starting point in the constructive alignment is the design of learning outcomes, which provide transparency in intentions and guiding principles for planning the assessment and teaching methods. The planned activities in learning outcomes are ought to reflect teachers' intentions what students should achieve as a result of their learning (Biggs & Tang, 2011).

Although the outcomes-led format of planning has been mandated in higher education for almost 20 years, the research shows that teachers are still struggling in designing learning outcomes that engage students (Cedefop, 2017; Dean & Wright, 2017; Hadjianastasis, 2017) and students have not clearly understood how learning outcomes benefit their learning (Brooks et al., 2014). These results seem to imply that the fundamental purpose that learning outcomes are ought to serve, has gotten lost in the processes of policy regulated quality assurance and indicate how learning outcomes have become more of a "mechanical tool" in the higher education pedagogy (Hussey & Smith, 2008).

3. Students' perceptions of learning outcomes

Although students are at the heart of the concept of learning outcomes, not many studies have explored students' perceptions of their learning experiences in the outcomes-led educational settings (Hadjianastasis, 2017). The results of those studies are not always unanimous. On one hand, it was found that an outcomes-led- and a "regular" course unit did not radically differ in students' experiences, reflecting a similar level of satisfaction (Deneen, Brown, Bond, & Shroff, 2013). In another study, on the other hand, students have evaluated learning outcomes both to restrict and splinter their knowledge, as well as to support their learning (Brooks et al., 2014).

Although from slightly different perspectives in different studies, students' perceptions give valuable feedback to the design of learning outcomes. Kyndt, Berghmans, Dochy, and Bulckens (2014) for example, reported that students dislike a course design where the curriculum was presented as a list of topics that should be memorised. However, being in control of the progress of the course unit and being able to choose the learning approaches to achieve the learning outcomes, related to students higher levels of satisfaction.

Several studies have concluded that learning outcomes, when designed within a narrow spectrum, limit students' learning and result in a lack of intellectual challenge (Brooks et al., 2014; Van der Horst & McDonald, 1997) and reduce students engagement with their studies (Hadjianastasis, 2017). Reduced level of engagement is reflected in unsatisfactory preparation for classroom activities, reduced participation, declining attendance, and greater reliance on teachers for knowledge acquisition (Baron & Corbin, 2012). Disengaged students are more likely to experience difficulties and are at high risk of dropping out of studies (Fredricks, Blumenfeld, & Paris, 2004; Wilson et al., 2014).

4. Design of learning outcomes

Teachers are responsible for preparing the teaching and learning events by indicating what skills, knowledge, and attitudes students should develop as a result of their learning (Biggs, 2014). Brophy (2013) emphasizes that students should constantly be challenged with tasks that include skills and knowledge beyond their current level of mastery to keep up their motivation and engagement. Brophy's views are in accordance with the general principles of student-centred learning, which state that the aim of teaching is to stimulate students in becoming active and autonomous learners (Prosser & Trigwell, 1999). Autonomy is one of the psychological needs, which fosters motivation for and engagement with any activity currently at hand (Ryan & Deci, 2000). Even though teachers are considered as the key agents in designing student-centred learning environments (Morcke, Dornan, & Eika, 2013), the aim of becoming active and autonomous in learning sets new responsibilities for both teachers and learners. New responsibilities might cause reluctance, as transforming the ways of thinking and learning may be difficult, uncomfortable and take time (Prosser & Trigwell, 1999). Donche and Van Petegem (2011) add that before teachers are able to support students in becoming autonomous learners, teachers themselves need to master the desired competencies which facilitate autonomy and responsibility in learning. Similarly, Hadjianastasis (2017) has found that teachers design learning outcomes without paying much attention to how the designed learning outcomes may affect the way they teach and most importantly, how students learn.

It is evident that without a supportive system and preparation, it may be difficult for teachers to adjust and change their views of learning and teaching, especially when they are most familiar with a teacher-centred paradigm (Biggs, 2014; Hadjianastasis, 2017; Struyven, Dochy, & Janssens, 2010). To understand how learning outcomes affect students' learning, it would be relevant to take a closer look of what constitutes the design of learning outcomes relative the levels of cognitive demand.

4.1. Bloom's Taxonomy of cognitive demand

While designing the content and delivery of the course unit and its learning outcomes, university teachers must consider the specific requirements of the discipline in question as well as ways of how to challenge students to develop their cognitive abilities. There are several models which help teachers to design learning outcomes e.g. Solo taxonomy (Biggs & Tang, 2011), Kirkpatrick's four level organisational training evaluation framework (Praslova, 2010), taxonomy of significant learning (Fink, 2013). However, Bloom´s Taxonomy of cognitive demand has been widely used and suggested as a guiding tool for designing learning outcomes in the Bologna process (Booker, 2007). Hence, in the current study, a revised version of Bloom's Taxonomy (Krathwohl, 2002) was used for classifying learning outcomes.

Bloom's Taxonomy is a hierarchical framework, which allows classifying the verbs and nouns in learning outcomes between six potential levels (i.e. 1. *Remember*, 2. *Understand*, 3. *Apply*, 4. *Analyse*, 5. *Evaluate*, 6. *Create*), where the first is considered the lowest and sixth level the highest of cognitive demand.

According to Bloom (1978), learning should be challenging and lead students to incrementally achieve higher order levels of the taxonomy.

Three highest of them- the ability to analyse, evaluate and create are also considered to be in demand in the modern society and labour market (Redeker et al., 2012). It is generally accepted that higher order levels of cognitive demand rest on a foundation of the achievement of lower levels of cognitive demand (Booker, 2007). Handelsman, Miller, and Pfund, (2007) argue that focusing solely on the lower levels of cognitive demand is unlikely to prepare students for the challenges of transferring knowledge to new contexts. Although it is suggested that raising the levels of cognitive demand can lead to meaningful learning (Krathwohl, 2002; Struyven et al., 2010), designing learning processes at higher levels of cognitive demand does not guarantee that students will respond at the same level (Stes, De Maeyer, Gijbels, & Van Petegem, 2012).

5. Learning outcomes in Estonian higher education context

Due to the implementation of Bologna process actions, the formulation of learning outcomes has been compulsory in Estonian higher education since 2009. The Standard of Higher Education in Estonia, one of the source documents for setting uniform requirements for curricula, states that learning outcomes should be designed at the threshold level (Vabariigi Valitsus, 2016). The responsibility for designing the course unit learning outcomes has been placed on teachers. During a period of few years since 2009, Estonian university teachers were subjected to optional training sessions, where the principles of Biggs constructive alignment and Bloom's Taxonomy of cognitive demand were introduced. Almost a decade has passed. Recent studies in Estonia show that the higher education institutions are still in the transition phase with implementing the concept of learning outcomes in the expected ways (Pilli & Vanari, 2013; Tammets & Pata, 2013). It has emerged that teachers struggle with systematically aligning the learning outcomes, activities and assessment methods (Tammets & Pata, 2013). Although the Standard of Higher Education provides guidelines[2] that universities are ought to follow in the process of implementing the outcomes-led design, it was demonstrated that teachers tended not to follow them. Teachers regarded the standard as an administrative formality, but not as a conceptual approach to teaching guided by law (Tammets & Pata, 2013).

Since learning outcomes ought to guide students learning it is important to explore the perceptions of students who are the recipients in the learning process. An earlier study of Estonian students' (n = 1329) perceptions demonstrated that the learning environments they were subjected to in different course units supported them in achieving learning outcomes (Kumpas-Lenk, Tucker, & Gupta, 2014). However, more than third of the students reported not feeling engaged with their studies, admitting that they did not prepare for the lectures, nor seminars to make the most of them and that they had not thought about how to learn more effectively in the studied unit (Kumpas-Lenk et al., 2014). The teachers, who taught the surveyed students, were asked to evaluate whether the learning environments they created in the course units supported students in achieving the learning outcomes, and the level of engagement the students displayed. Similarly to students, teachers reported lower agreement with the engagement items and higher agreement with the aspects of learning environment e.g. teaching activities and methods (Kumpas-Lenk, Eisenschmidt, & Rumma, 2017). These results suggest that the designed learning outcomes are in fact reflected in the actual activities undertaken in the course unit, as otherwise the discrepancy between the activities and learning outcomes would have at least to some degree emerged from students' responses. However, the fact that more than third of the students did not feel engaged with their studies despite having achieved the learning outcomes may imply that the learning outcomes (e.g. The student knows the nature and objectives of budgeting) might not have been challenging enough to spark students' interest.

Therefore, in the current study we aim to investigate whether the level of cognitive demand of the designed learning outcomes has an effect on students' perceptions of their achievement of the learning outcomes, satisfaction, motivation, and engagement with their studies. The following research questions were posed:

(1) How are course unit learning outcomes designed according to the levels of Bloom's Taxonomy?
(2) What are students' perceptions of their achievement of the course unit learning outcomes based on the levels of Bloom's Taxonomy?
(3) Is there a relationship between the levels of learning outcomes according to Bloom's Taxonomy and students' perceptions of their achievement of learning outcomes, satisfaction, motivation and engagement?

6. Methods

6.1. Instrument

The current study is part of a larger project investigating students' perceptions in outcome-based education. The data was collected with a student evaluation survey called eVALUate (Oliver, Tucker, Gupta, & Yeo, 2008), which was adapted to the Estonian higher education context (Kumpas-Lenk et al., 2014). The eVALUate survey comprises of 14 items in 11 of which students must indicate on a scale (strongly agree, agree, disagree, strongly disagree and unable to judge) of what helped them to achieve the course unit learning outcomes (items 1–7), how they contributed to their own learning in terms of motivation and engagement (items 8–10) and how satisfied they are with the course unit (item 11). Items 12–14 comprise of open questions regarding the aspects, which helped/hindered their learning and suggestions for improvements (Kumpas-Lenk et al., 2014). The current study focuses on the section of motivation and engagement (items 8–10) of the eVALUate instrument (see Appendix A).

Additionally, participants rated on a 5-point rating scale (achieved fully, achieved mostly, achieved minimally, did not achieve, unable to judge) how they think they had achieved each of the learning outcomes described in the course unit's outline. The course unit outlines are structured documents that contain information about the unit title, the aims and learning outcomes, resources and assessment criteria (Vabariigi Valitsus, 2016). In the current study only the data about learning outcomes in course unit outlines was included in the analysis, where each individual learning outcome was coded according to the revised Bloom´s Taxonomy (Krathwohl, 2002).

6.2. Participants

A total of 3669 undergraduate students regardless of the study year were invited to complete the eVALUate survey on a voluntary basis and 1329 survey submissions suitable for the analysis were received (response rate of 36%). Students were recruited from 8 faculties of 6 higher education institutions in Estonia (3 universities of applied sciences and 3 universities). The sample consisted of students from the following fields of study: service, social sciences, business and law, health and wellbeing, humanities and arts. The nominal duration of undergraduate studies in Estonia is 3–4 years (180 to 240 credit points) and is typically undertaken in the form of contact learning (lectures, seminars, practicums) and to a lesser extent through work practice (Vabariigi Valitsus, 2016). Participants' average age was 25 years (SD = 7,9; range 18–52 years). 1095 of the respondents were women and 234 were men. According to the statistics of the Ministry of Education and Research in Estonia the gathered data represents the student

[2] The standard of Higher Education sets general learning outcomes for undergraduate studies based on the European Qualification Framework. It is the responsibility for higher education institutions to follow these general learning outcomes in designing undergraduate curricula and course programs.

population in the studied fields (Haridussilm, 2018). The respondents indicated that they had been participating in most or all the lectures in the surveyed course units.

The data about the learning outcomes was gathered from the outlines of 78 course units, which were also surveyed for student feedback using eVALUate. The course unit outlines were publicly available in each of the participating organisations websites. In total, 380 learning outcomes from undergraduate course unit outlines were included in the analysis. On average there were 4 to 8 learning outcomes per course unit, ranging from 2 to13.

6.3. Procedure

Ethics approval was granted from each of the participating universities. The student evaluation survey was embedded within an online survey environment LimeSurvey and sent out to the students few days after the end of each teaching period for each course unit. Students were informed that their feedback was anonymous and that the results would only be reported in an aggregated form. Participants were invited to give feedback on their experiences on a voluntary basis and submission of the survey indicated their informed consent. The survey was available for three weeks during which three reminders were sent to non-responders. The data was anonymised prior to analysis (Kumpas-Lenk et al., 2014).

6.4. Data analysis

6.4.1. Levels of learning outcomes

1st phase. To systematically classify the 380 learning outcomes in 78 course unit outlines, a deductive approach to content analysis was adopted (Elo & Kyngäs, 2008). The learning outcomes were divided into six main domains according to the revised Bloom's Taxonomy (Krathwohl, 2002) where the 1 st level is considered the lowest and 6th level the highest: 1 st level - *Remember*, 2nd level - *Understand*, 3rd level - *Apply*, 4th level - *Analyse*, 5th level - *Evaluate*, 6th level – *Create*. Prior to the categorisation, all the learning outcomes were read repeatedly to establish the intended meaning of the text (Elo & Kyngäs, 2008). Next, the verbs from each learning outcome were determined and coded based on the verbs from Bloom's Taxonomy. The categorization was based on verbs, as the verbs in learning outcomes outline what students are expected to know and/or be able to do (Biggs, 2014). When a learning outcome included more than one verb, they were coded separately. Examples of how the verbs were coded are presented in Table 1.

To grant consistency of the coding methodology, a coding scheme based on Bloom's Taxonomy was developed within a research team of three. The team discussed examples of the data to reach a common understanding of the coding criteria. With ambiguous verbs, a team decision was reached by consensus agreement. The consistency of the coding scheme was checked and improved repeatedly until full consistency was achieved (Schilling, 2006). On the basis of the coding scheme, the verbs from each learning outcome in the entire dataset were coded based on Bloom´s Taxonomy and rechecked twice to avoid errors. Finally, each code was categorized based on the six levels of Bloom´s Taxonomy.

2nd phase. In order to determine whether the study year of the course units influences the level of the learning outcomes, a One-Way ANOVA was performed using SPSS Statistics version 22.0.

3rd phase. For further quantitative analysis, the overall level of cognitive demand for the course unit as a whole was determined. To quantify the data, it was decided that the overall level of cognitive demand of the course unit should be based on the highest level of the stated individual learning outcomes as it reveals the depth of skills and knowledge the students need to obtain to succeed in a course unit. For example, if a course unit outline listed three learning outcomes that were coded as *Remembering*, *Applying*, and *Remembering*, then the generalised level of the course unit was *Applying* (See Table 1).

6.4.2. Students' perceptions of their achievement of the course unit learning outcomes

To determine students' perceptions about their achievement of the learning outcomes (how they thought they achieved each learning outcome described in the studied course unit outline), an aggregated percentage agreement - (percentage of responses with 'agree' or 'strongly agree'; 'achieved mostly' or 'achieved fully') was calculated and analysed for each course unit based on the categorisations of the Bloom' s Taxonomy of cognitive demand. The results of the analysis from the eVALUate items (8–11) were extracted from the previous study by Kumpas-Lenk et al., 2014.

6.4.3. Relationships between the levels of learning outcomes and students' perceptions of the surveyed items

Pearson Chi square goodness of fit test was conducted to determine the association between learning outcomes' levels and students' perceptions of their achievement of the learning outcomes, their satisfaction, motivation and engagement with the course unit. For the analysis of a chi square goodness of fit test, students' responses to eVALUate items were divided into two groups labelled Agree (included responses Strongly agree and Agree) and Disagree (included responses Strongly Disagree and Disagree). The responses for the Unable to Judge category were omitted. To interpret the results from the Chi-Square test, odds ratios were calculated to the eVALUate survey questions (see Appendix A) where association to the levels of learning outcomes were found in order to understand the effect size.

7. Results

7.1. Levels of learning outcomes

Table 2 revealed concerningly, that none of the learning outcomes had been designed on the highest level of cognitive demand (*Creating*-6th level) and only in one institution about quarter of all the individual learning outcomes within course units had been designed maximum at the level of *Evaluating* (the 5th level).

Unexpectedly 85% of the individual learning outcomes within course units were found to correspond to the three lowest levels of cognitive demand: *Remembering*, *Understanding* and *Applying* (see Table 3). In almost half of the course units learning outcomes had been

Table 1
Example of the content analysis.

Learning outcomes in one course unit outline	Verb	Code	The level of cognitive demand of the individual learning outcomes within a course unit	Course unit's overall level of cognitive demand
After completing a Budgeting course unit the student knows the essence and basics of how to plan the company's business.	Knows	Memorise	Remembering	Applying
The student knows the nature and objectives of budgeting and is able to prepare and demonstrate budgets in various areas, including investment budgets.	Knows Is able to prepare Demonstrate	Memorise Show Demonstrate	Remembering Applying	

Table 2
The characteristics of included institutions.

Type of Insti-tution	Institution	Nr of course units included in the study	Nr of individual learning outcomes within course units with the level of cognitive demand					
			1 st Remembering	2nd Understanding	3rd Applying	4th Analysing	5th Evaluating	6th Creating
Universities	University 1	7	7	9	8	4	0	0
	University 2	13	28	14	31	9	2	0
	University 6	9	7	13	15	5	0	0
Universities of applied sciences	University 3	8	15	8	9	1	0	0
	University 4	33	46	28	48	6	24	0
	University 5	8	8	11	20	4	0	0
	Total	78	111	83	131	29	26	0

designed maximum at the level of *Applying* (3rd level). Based on the hierarchical structure of Bloom's Taxonomy it could potentially be assumed that the average level of the learning outcomes increases with each study year, e.g. the learning outcomes of the first-year course units mainly aim at remembering and understanding the information, whereas on the second and on the third-year higher order thinking skills are targeted, like analysing, evaluating and creating. Therefore, the 380 coded learning outcomes were divided between the study years to be able to observe the distributional patterns. Hence, Table 3 shows that learning outcomes are not designed hierarchically based on the study years. The One-Way ANOVA analysis demonstrated that the study year does not significantly influence the average level of the learning outcomes of the course units ($F(2377) = 2.71$, $p = .067$). Therefore, the data was further analysed in an aggregated form.

7.2. Students' perceptions of their achievement of the course unit learning outcomes

A comparison of students' perceptions (aggregated percentage agreement) of their achievement of the overall course unit learning outcomes, their motivation, satisfaction, and engagement items at each level of Bloom's Taxonomy is shown in Table 4. Where percentage agreement is less than 80% for an item, the number is highlighted in bold to indicate that the item is lower than what is considered acceptable (a standard defined by the original eVALUate) (Tucker, Halloran, & Price, 2013) and warrants further investigation.

Regardless of the different levels of cognitive demand, students' perceptions revealed a high level of agreement with most items: students were motivated, satisfied with the studied course unit and felt they had successfully achieved the overall course unit learning outcomes. Lower agreement was reported with the engagement items (items 9 and 10).

7.3. Relationships between the levels of learning outcomes and students' perceptions of the surveyed items

Pearson Chi-square test revealed that there was evidence of a relationship between the level of learning outcomes according to Bloom's Taxonomy and students' perceptions of their satisfaction with the course unit ($\chi2(4) = 11.55$, $p = .021$); their motivation to study within the course unit ($\chi2(4) = 11.63$, $p = .020$); their engagement by thinking how they could learn more effectively in the studied course unit ($\chi2(4) = 16.08$, $p = .003$) and their perceptions about how well they think they achieved the learning outcomes within the course unit ($\chi2(4) = 24.49$, $p < .000$). The analysis also revealed that there was no evidence of a relationship between the level of learning outcomes and students' perceptions about making the best use of the learning experiences in the studied course unit ($\chi2(4) = 9.15$, $p = .057$).

The analysis of odds ratios indicated that the odds of students agreeing that they were motivated to learn, satisfied with their studies, achieved the learning outcomes and thought how to learn effectively at the level of *Understanding* was 1.25–3.29 times higher than at the level of *Remembering*; at the level of *Applying* 1–1.88 times higher than at the level of *Understanding*; at the level of *Analysing* 0.51-0.7 times higher than at the level *Applying* and at the level of *Evaluating* 1.49–2.09 times higher than at the level of *Analysing*.

8. Discussion

This study sought to give insight of how the levels of cognitive demand of the learning outcomes according to Bloom's Taxonomy are related to students' motivation, satisfaction, engagement and achievement of the course unit learning outcomes.

8.1. Levels of learning outcomes

The results of the current study show that the majority of learning outcomes in the surveyed course units were designed at the lowest level (*Remembering, Understanding, Applying*) and none at the highest level of cognitive demand (*Creating*). Similarly, Momsen, Long, Wyse, and Ebert-May, (2010), who used Bloom's Taxonomy to categorize the cognitive processing levels targeted by learning outcomes and assessments in undergraduate biology courses in American universities found that almost all the analysed assessment items in their study targeted lower levels of Bloom's Taxonomy, namely *Remembering* and *Understanding*. The low levels of cognitive demand of the assessment items

Table 3
Distribution of individual course unit learning outcomes by study year and course units' overall level of cognitive demand.

Degree of difficulty	Levels of Bloom's Taxonomy	1 st study year individual learning outcomes		2nd study year individual learning outcomes		3rd study year individual learning outcomes		All individual learning outcomes		Course units' overall level of cognitive demand	
		Nr	%	Nr	%	Nr	%	Nr	%	Nr	%
Lowest level	1. Remembering	37	9.7%	29	7.6%	45	11.8%	111	29.0%	2	3.0%
	2. Understanding	24	6.3%	32	8.4%	27	7.1%	83	22.0%	8	10.0%
↓	3. Applying	47	12.4%	45	11.8%	39	10.3%	131	34.0%	32	41.0%
	4. Analysing	9	2.4%	10	2.6%	10	2.6%	29	8.0%	16	20.0%
Highest level	5. Evaluating	2	0.5%	15	3.9%	9	2.4%	26	7.0%	20	26.0%
	6. Creating	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Total	119	31.3%	131	34.5%	130	34.2%	380	100.0%	78	100.0%

Table 4
Students' perceptions of their achievement of course unit learning outcomes, their motivation, satisfaction, and engagement.

				Motivation	Engagement		Satisfaction
Levels of Bloom's Taxonomy	Nr of course units	Nr of student responses	Achieve-ment of course unit learning outcomes	8. I was motivated to achieve the learning outcomes in this course unit	9. I prepare for the lectures … to take the maximum use out of these.	10. I thought about how to learn more effectively in this course unit.	11. Overall I am satisfied with this course unit.
Remembering	2	33	96.2%	82.9%	80.7%	**64.2%**	88.5%
Understanding	8	99	87.4%	81.8%	**68.0%**	**66.1%**	83.4%
Applying	32	641	86.9%	89.3%	89.4%	89.1%	91.0%
Analysing	16	275	87.2%	88.2%	**72.0%**	**68.0%**	85.9%
Evaluating	20	281	88.9%	90.5%	**77.3%**	**73.8%**	87.6%
Creating	0	0	0	0	0	0	0
Total	78	1329					

were interpreted as a greater emphasis on facts in the included course units rather than higher-order thinking.

The underlying idea of formulating learning outcomes is to clarify the goals of the learning process. As they are designed by teachers, it can be assumed that the learning outcomes reflect teachers' ways of thinking of their course unit in relation to the levels of cognitive demand. While the majority of learning outcomes in the current study were designed at the lowest level of cognitive demand, there is reason to believe that teachers themselves think about their subject in terms of remembering, understanding and applying knowledge. In addition, teachers' knowledge and skills in teaching others depend on the ways how they were educated (Hadjianastasis, 2017), referring to a vicious circle. Estonian education has been traditional and fact-oriented for a long time and only in the past few decades the attention has started shifting to the active and student-centred learning (Pilli & Vanari, 2013).

Since higher education institutions go through the process of rigorous quality assurance, learning outcomes are mostly used to serve the easily measurable and behaviouristic quality assurance obligation rather than educational purposes (Hussey & Smith, 2008; Murtonen et al., 2017). We believe that the policy driven obligation to formulate the learning outcomes without the conceptual change in the understanding of teaching and learning, drives teachers to dutifully design learning outcomes as a tick-a-box assignment communicating and measuring the content of their course unit rather than communicating students what they are expected to be able to do with the content (Hadjianastasis, 2017). This is problematic since designing learning outcomes only at lower levels ignores the core purpose of higher education to produce something new (Murtonen et al., 2017). Facts are relevant as one can not think without having the facts to mentally operate with, but something new can only be created if facts are operated with in unconventional ways. That, by definition, requires higher-order thinking skills (Booker, 2007; Struyven et al., 2010).

Additionally, the renewed national regulations might have had an impact on the design of the learning outcomes. Before learning outcomes were compulsory, teachers were instructed to set the aims of the course unit at the highest cognitive level. Today, the Standard of Higher Education states that learning outcomes should be designed at the threshold level (Vabariigi Valitsus, 2016), aiming to reduce the dropout rates and increase the number of students ending their studies within nominal time. As these performance indicators directly impact the funding of universities, the diligently executed simplifications in expected learning outcomes may have unexpectedly decreased the average level of cognitive involvement and affected students' engagement with their studies. The critics of the learning outcomes movement have indicated that focusing merely at the minimum or threshold level can inhibit the learning process and prevent students from going beyond these thresholds (Cedefop, 2017; Furedi, 2012).

8.2. Students' perceptions of their achievement of the course unit learning outcomes

Students' perceptions revealed that they believed they had achieved most of the course unit learning outcomes. High percentage agreement of the achievement of course unit learning outcomes might be explained by the respondents' sample, where the majority of the respondents were actively involved students who participated in most or all the lectures (Kumpas-Lenk et al., 2014). Previous studies partly confirm these assumptions by reporting that higher achieving students give higher ratings on teaching effectiveness in a particular course (Spooren & Mortelmans, 2006). But there is another side of the coin, which might also explain these results. Students' perceptions of their achievement of the unit learning outcomes may be high because most of the learning outcomes in this study were designed at lower levels of cognitive demand. The question is how demanding and educative is the learning process for students, if learning outcomes are only designed at lower levels of cognitive demand? In turn, the lack of challenge could lead to low motivation and loss of interest.

8.3. Relationships between the levels learning outcomes and students´ perceptions of the surveyed items

The results of the current study demonstrated that the design of learning outcomes relates to how students perceive their achievement of learning outcomes, satisfaction, motivation and engagement. Similarly to previous studies, the results of the current study demonstrated that students were more likely to be satisfied, engaged to their studies and motivated to achieve the learning outcomes, which were designed at the higher order of cognitive demand. Students have also previously been demonstrated not to be satisfied with curricula, where the topics should be memorised in an unreflective way (Kyndt, Berghmans, Dochy, & Bulckens, 2014). In accordance with previous studies, we have demonstrated that expecting students to perform at cognitive levels which require more complex ways of thinking than just memorising facts, increases the likelihood of students taking personal responsibility for their learning and development (Brooks et al., 2014; Ghanizadeh, 2016).

Lower level learning outcomes might be one of the reasons why students do not feel engaged to their studies and might explain the consistent and slightly rising (15%–18%) dropout rates in the past decade (Haridussilm, 2018). These results illustrate that implementing learning outcomes in Estonia over the past decade has not had the decreasing impact on students' dropout rates, as it could have been expected based on the underlying concepts of the Bologna process.

Interestingly, no evidence of a relationship was found between the levels of learning outcomes and students' perceptions of whether they had made the best use of the learning experiences in the studied course unit. When learning outcomes are implemented without explaining

students how learning outcomes should guide their learning (Hadjianastasis, 2017), a disconnect between students' learning and learning outcomes may occur. Therefore, students may spend less time preparing for the lectures and seminars or merging their individual learning with the learning outcomes. As a result, students are likely to lose interest in taking responsibility for their learning and instead of investing into their professional development, they tend to choose to participate passively doing the minimum for the provided degree (Mägi, Aidla, Reino, Jaakson, & Kirss, 2011). However, research has shown that students desire for personal and professional development, is one of the reasons amongst others e.g. earn living (Mägi et al., 2011) why Estonian students employment rate is nearly 60% or higher (Kirss, Nestor, Haaristo, & Mägi, 2011).

9. Conclusions

The results of our research suggest that the design of learning outcomes has a significant impact on students' satisfaction, motivation, engagement with their studies and achievement of the learning outcomes. The current study contributes to the debate by demonstrating that the levels of learning outcomes are related to students' perceptions about their engagement. This is important, since the results of this study showed that the majority of learning outcomes were designed at lower levels of cognitive demand and less agreement was reported with engagement items. We believe that these results demonstrate a crucial link, which should not be ignored while designing learning outcomes in higher education.

The fundamental aim, which drives the debate behind the design of learning outcomes, is to change the concept of education from teacher-centred teaching to student-centred learning. Learning outcomes could potentially be used as a powerful tool in guiding and reflecting this process. Therefore, it is about the time for universities to stop masking the implementation of traditional teaching practices under the name of student-centred learning and designing learning outcomes without the conceptual change in thinking.

Universities should provide support, training and mentoring both for students and teachers on how to carefully reconceptualise and practice learning and teaching methods in ways which lead to meaningful learning. The paradigm shift cannot be achieved by focusing solely on regulations. Instead, the change in thinking is more likely to occur when university leaders' management style facilitates open discussions as well as supporting the feeling of ownership and responsibility of all involved parties.

9.1. Limitations and further research

There were no students from the STEM field in the sample. It would have been interesting to see whether there are differences in students' perceptions from different disciplines. Also, qualitative methods might have been helpful in explaining students' reasoning behind the current results. Further research on how teachers make decisions about formulating learning outcomes and how much the designed learning outcomes actually reflect teachers' intentions and conceptual understanding about learning would provide a valuable addition to the ongoing debate.

Conflict of interest

The authors declare that they have no conflict of interest.

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Appendix A. eVALUate Items 8–11 and the explanatory text that accompanies each item

The survey asks students to evaluate the following items on the rating scale of strongly agree, agree, disagree, strongly disagree and unable to judge.

(8) I was motivated to achieve the learning outcomes in this unit.

Being motivated means having the desire and willingness to complete any goals.

(9) I prepare for the lectures and seminars in order to take the maximum use out of these.

I get ready for the lectures, seminars, practical classes, etc. I look for further reading, I prepare for and follow up learning, I work through the sources that are offered by the teacher in this unit.

(10) I thought about how to learn more effectively in this unit.

I took time to think about how I can learn more effectively.

(11) Overall I am satisfied with this unit.

This unit provided a quality learning experience.

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KOKKUVÕTE

VÄLJUNDIPÕHISE ÕPPE RAKENDAMINE EESTI KÕRGHARIDUSES: ÕPIVÄLJUNDITE DISAIN ON OLULINE

Kõigest mõned kümned aastad tagasi oli tavaks, et inimesed õppisid endale sobiva ameti ja töötasid sellel ametil terve elu. Nüüdseks on olukord seoses tehnoloogia kiire arengu ja globaliseerumisega kardinaalselt muutunud, ning ühiskond ja üksikisikud koos sellega. See on viinud olukorrani, kus 30 aastat tagasi toiminud professionaalse arengu põhimõtted, ei ole täna enam efektiivsed. On selge, et tänane ja tuleviku ühiskond eeldab, et inimesed on võimelised toime tulema kiiresti muutuva maailmaga, neil on nii valdkonna teadmised kui ka üldised pädevused nagu oskused kriitiliselt mõelda ja probleeme lahendada, luua uusi lahendusi, töötada meeskonnas, pidevalt õppida ja enda õppimist juhtida (European Commission, 2017; OECD, 2018). See on muutus, millega toimetulek tähendab, et muutuvad õppimise ja õpetamise viisid, kus passiivse teadmiste omandamise asemel on õppijad aktiivsed, kaasatud ning vastutavad ise oma teadmiste loomise eest (Biggs & Tang, 2011).

Vastamaks tööjõuturu ja ühiskonna ootustele sõlmiti 1999. aastal 29 riigi vahel kokkulepe – Bologna Deklaratsioon, mis seadis eesmärgiks Euroopa ühtse kõrgharidusruumi loomise. Bologna Deklaratsioonist alates on kõrgharidust nii Eestis kui ka mujal Euroopas tugevasti reformitud (Paris Communiqué, 2018). Antud muutuste keskmes on olnud õppe läbipaistvamaks muutmine, õppija individuaalse arengu toetamine, õppe kvaliteedi parendamine, kõrgkooliõpingute ligipääsetavuse tagamine kõigile, kuid samas ka kõrgkooliõpingutest väljalangevuse vähendamine ja õppijakeskse õppe toetamine (Cedefop, 2017; European Commission, 2015). Nende eesmärkideni jõudmiseks on ühe meetmena hakatud rakendama väljundipõhist õpet. Väljundipõhise õppe keskmes on õppija ning õpiväljundite saavutamine, kus õppekava eesmärkide kavandamisel ja õppetegevuse korraldamisel lähtutakse õppija arengu maksimaalsest toetamisest (Biggs & Tang, 2011; Spady 1994). Õpiväljundid kirjeldavad neid teadmisi, oskusi ja hoiakuid, mida üliõpilane oma õppimise tulemusel omandama peab (Adam, 2008; Biggs & Tang, 2011). Kõrgkoolis õpitu edukaks rakendamiseks tööelus peaksid õpiväljundid kajastama just neid teadmisi ja oskusi, mida ühiskond ning tööjõuturg oluliseks peavad (Redeker et al., 2012). Seega on õpiväljunditel ja väljundipõhisel õppel oluline osa õppeprotsessi muutmisel õppijakeskseks ning muutuste elluviimisel nii hariduses kui ka ühiskonnas tervikuna.

Viimasel aastakümnel Eestis ja mujal läbi viidud uuringud aga näitavad, et väljundipõhine õpe ei ole ootuspärasel määral rakendunud (Hadjianastasis, 2017; Murtonen, Gruber, & Lehtinen, 2017; Pilli & Vanari, 2013; Tammets & Pata, 2013; Udam, Seema, & Mattisen, 2015). Endiselt on probleemiks lõhe tööjõuturu vajaduste ning kõrghariduses õpetatava vahel (Cedefop, 2017; Haridus- ja Teadusministeerium et al., 2014; Sadler, 2016). Samuti on uuringud näidanud, et õppejõud, kes peavad väljundipõhist õpet rakendama, on segaduses ja raskustes üliõpilasi kaasavate

õpiväljundite kujundamisel (Dean & Wright, 2017; Hadjianastasis, 2017; Morcke, Dornan, & Eika, 2013; Pilli & Vanari, 2013; Tammets & Pata, 2013). Kuigi väljundipõhist õpet on Eesti kõrghariduses rakendatud pea kümme aastat, siis uuringud näitavad, et ka üliõpilased eelistavad olla õppeprotsessis passiivsed (Pilli et al., 2013; Roosalu et al., 2013). Samuti näitavad uuringud, et üliõpilased on olnud õppimisse vähe kaasatud, neile ei ole antud piisavalt võimalusi valida õpiülesandeid, ega juhtida oma õppeprotsessi nende vajadustest tulenevalt (Roosalu et al., 2013). See omakorda mõjutab üliõpilaste õppimist ja õpiväljundite saavutamist (Kahn, 2014; Kuh, 2009). Passiivsus ja vähene kaasatus õppimisse tõstab aga üliõpilaste kõrgkooliõppest väljalangemise riski (Fredericks, Blumenfeldt, & Paris, 2004). Samas on teada, et üliõpilaste õppimisse panustamist ja kaasatust on võimalik tõhustada õppeprotsessi kujundamise kaudu (Theobald, Windsor, & Forster, 2018). Üliõpilaste õppimise toetamiseks väljundipõhises õppes peavad õppejõud disainima õppeprotsessi viisil, kus nii õpiväljundid, õpetamise meetodid ja hindamine on omavahelises loogilises seoses ehk konstruktiivselt sidusad (Biggs, 2014; Biggs & Tang, 2011).

Käesoleva töö eesmärk oli teada saada, kuidas väljundipõhine õpe on Eesti kõrghariduses rakendunud. Täpsemalt uuriti, kuidas õpiväljundite disain, õppeprotsessi aspektid, ning õppijate tegurid toetavad üliõpilaste õpiväljundite saavutamist. Antud uurimistöö valimi moodustasid 1329 üliõpilast ja 94 õppejõudu kuuest Eesti kõrgkoolist, kes andsid hinnanguid üliõpilaste õpikogemustele 78 bakalaureusetaseme ainekursusel, mille õpiväljundeid omakorda analüüsiti kasutades Bloomi taksonoomiat. Lisaks oli uurimusse võrdlusena kaasatud 34885 Austraalia üliõpilaste hinnangud. Uurimus viidi läbi kasutades kombineeritud uuringudisaini. Esmalt selgitati kvantitatiivsete uurimismeetodite abil välja, millised õppeprotsessi aspektid ja õppijate tegurid toetavad üliõpilastel õpiväljundite saavutamist võrreldes Austraalia üliõpilaste, Eesti üliõpilaste ja -õppejõudude hinnanguid. Kuna nii Eesti üliõpilaste kui ka õppejõudude hinnangud üliõpilaste kaasatusse ja panustamisse õppimises olid madalamad, siis analüüsiti järgnevalt, millised õppeprotsessi aspektid ja õppijate tegurid kirjeldavad hinnanguid üliõpilaste kaasatusele ja panustamisele õppimisse. Seejärel analüüsiti vaatluse all olnud 78 ainekursuse 380 õpiväljundit kvalitatiivselt, et selgitada välja, millisel Bloomi taksonoomiast tuleneval kognitiivsel tasemel on õpiväljundid kirjeldatud. Mõistmaks, kas õpiväljundite kognitiivsed tasemed ja üliõpilaste hinnangud motivatsioonile, õppimisse kaasatusele ja -panustamisele, rahulolule ning õpiväljundite saavutamisele on omavahel seoses, kvantifitseeriti kvalitatiivsed andmed. Saadud tulemusi analüüsiti koos üliõpilaste hinnangutega, kasutades taaskord kvantitatiivseid uurimismeetodeid.

Töö tulemused on väärtuslikud nii teoreetilisest kui praktilisest küljest. Esmalt leiti, et üliõpilaste õpiväljundite saavutamist toetavad õppeprotsessi aspektid nagu õpiväljundite arusaadavus, õpikeskkond, õppematerjalid, sooritatud tööd, hindamisülesanded, tagasiside, tööde maht, õpetamine, ning õppijate tegurid nagu motivatsioon, õppimisse kaasatus ja -panustamine ning rahulolu. Seevastu ligi 30% õppejõude ja ligi 30% üliõpilasi tõid välja, et Eesti üliõpilased ei panusta õppimisse

ega ole õppimisse kaasatud. Nendele teguritele tuleb väljundipõhise õppe rakendamisel märksa enam tähelepanu pöörata, sest vähene õppesse kaasatus ja -panustamine võib viia üliõpilaste kõrgkoolist väljalangemiseni ja ei toeta üliõpilaste enda vastutuse võtmist oma õppimise eest. Hoolimata pingutustest muuta õpet väljundipõhise õppe rakendamisega õppijakesksemaks, on siiski suur osa üliõpilastest passiivsed õppijad, mis aga ei toeta tööjõuturu ja ühiskonna poolt seatud ootusi.

Teiseks, analüüsides täpsemalt, millistele aspektidele tasub õppejõududel üliõpilaste kaasatuse tõstmiseks tähelepanu pöörata. Selgus, et olulised on õppijate motivatsioon ja rahulolu kursusega, kursuse jooksul tehtud tööde maht ning nii õppijate kaasatus kui ka panustamine õppimisse. Siinkohal on oluline, et õppejõud koostöös üliõpilastega planeeriksid õppeprotsessi tegevusi. Nii saavad üliõpilased enam võimalusi võtta vastutust oma õppimise eest, ning kasvab õppijate teadlikkus nii konstruktiivsest sidususest, väljundipõhisest õppest kui ka nende kaasatus ja panustamine õppimisse. On ilmne, et õppijakesksele lähenemisele üleminekul vajavad üliõpilased kõrgkoolipoolset tuge, mis toetaks neil oma õppimise eest vastutuse võtmist ning annaks võimaluse teadlikult ja turvaliselt praktiseerida ennastjuhtivat ning autonoomset õppimist õpiväljundite saavutamiseks. Samas näitavad käesoleva uuringu tulemused, et ka õppejõud vajavad tugisüsteeme nagu mentorlus ja koolitused, mis toetaksid õppejõudude pädevusi luua õppija õppimist toetavat õpikeskkonda. Enne kui õppejõud saavad toetada õppijate õppimist, on neil endil vaja omandada oskused, kuidas olla ennastjuhtiv elukestev õppija ja kuidas muuta õppimise paradigmaatilist lähenemist. See eeldab aga, et õppejõud on valmis koos õppijatega muutuma ning rakendama õppijakeskseid õpetamispraktikaid.

Kolmandaks näitasid töö tulemused, et kõrgkoolide ainekursuste õpiväljundite disainimisel keskenduti enim teadmiste omandamisele ja oskuste arendamisele. Mitte ükski õpiväljunditest ei olnud disainitud kõrgemal kognitiivsel tasemel ehk loomise tasandil. Samuti hindasid üliõpilased, et nad saavutasid enamikud kursustele seatud õpiväljunditest. Õpiväljundid peegeldavad õppejõudude mõtlemist õpetatavast ainest ehk millisel kognitiivsel tasemel nad oma ainet näevad. Käesolev uuring näitab, et õpiväljundites on ühiskonna ja tööjõuturu vajadustest tulenevaid ootusi suudetud realiseerida vaid osaliselt. Kõrgemat kognitiivset pingutust nõudvatele väljunditele (sh üldpädevustele nagu kriitiline mõtlemine, analüüsioskus, loomine ja eneseregulatsioon) analüüsitud ainekursuste õpiväljundites enamasti ei keskenduta. Siinkohal on oluline küsida, et kui eesmärk on pigem teadmiste reprodutseerimine, siis kuidas kõrgkoolid vastavad tulevikuühiskonna ootustele? Samas võib arvata, et kõrgemat kognitiivset pingutust nõudvate õpiväljundite seadmisega jõutakse ka lähemale tööjõuturu ootustele ja inimeste võimalustele eneseteostuseks.

Neljandaks näitasid töö tulemused, et õpiväljundite disain on oluline. Uuringust selgus, et õpiväljundite disain ja üliõpilaste hinnangud õpiväljundite saavutamisele, motivatsioonile, kaasatusele õppimisse ning rahulolule kursusega on omavahel seoses. Veelgi enam, üliõpilaste hinnangute kohaselt oleksid nad rohkem kaasatud, motiveeritud ja rahulolevamad saavutamaks õpiväljundeid, kui õpiväljundid oleksid

sõnastatud kõrgemat kognitiivset pingutust nõudval tasemel. Seega üliõpilaste paremaks kaasamiseks õppimisse on vaja disainida õpiväljundid pingutust nõudval tasemel, mida saab kirjeldada üldpädevuste kaudu nagu analüüs, loomine, kriitiline mõtlemine.

Kokkuvõtvalt – kuigi väljundipõhist õpet on Eestis rakendatud pea kümme aastat, siis käesoleva uuringu tulemused näitavad, et ruumi arenguks jagub. Väljundipõhise õppe süsteemseks rakendamiseks tuleb märksa enam tähtsustada õpiväljundite disaini ja õppija kaasatust ja tema panustamist õppesse. Esmalt peavad kõrgkoolid tagama, et õppijad ei jääks õppeprotsessis passiivseks, et tõesti toimub üleminek traditsiooniliselt õpetaja ja õpetamiskeskselt lähenemiselt õppija ja õppimiskesksele lähenemisele. Teisalt on õppijate ettevalmistamiseks kiiresti muutuva maailma, ühiskonna ning tööjõuturu vajadustele vaja õpiväljundeid disainida viisil, mis võtab arvesse üldpädevusi nagu kriitiline mõtlemine, uute lahenduste loomine, meeskonnatöö, oskus pidevalt õppida ja enda õppimist juhtida. Oluline on panustada õppejõudude pädevuste kujunemisse luua ainekursuseid, mis on konstruktiivselt sidusad ja kus õpiväljundid on disainitud kõrgematel kognitiivsetel tasemetel.

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