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Reconsidering University Educational Environment for the Learners of Generation Z

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Reconsidering University Educational Environment for the Learners of Generation Z

Kitoks žvilgsnis į Z kartai skiriamą universiteto edukacinę aplinką

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Abstract

A deeper understanding, analysis, appropriate design and management of students' educational environment can be a powerful tool to improve the performance of both students and universities in the 21st century. The need to focus on the development of learning environments in higher education is also expressed by educational policy makers. In view of the fact that generations change and learners gain unique characteristics that differentiate them from the earlier generations, it is essential that learning environments are constantly researched and reconsidered. In the current article attention is centered on reconsideration of university educational environment for the learners of the new generation – Generation Z.

Based on the literature review, the current article dwells on the discussion about educational environments for Generation Z. First, most common characteristics of the latest generation of learners have been explored and grouped into the characteristics that have a positive impact on learning and those detrimental to learning. Second, the article examines the concept of university educational environment. Third, it investigates the features of university educational environment that could be acceptable to the learners of Generation Z in higher education. The article seeks to discuss what in particular should be reconsidered by educators when developing educational environment so that it would become an influential part of learners' personal learning environments.

KEYWORDS: Generation Z, higher education, educational environment.

Introduction

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Introduction

The need to focus on the development of learning environments has been widely expressed in recent educational policies and reforms worldwide. For instance, The European Higher Education Area (2010) and the Education, Audiovisual and Culture Executive Agency (2011) declared that educational institution, including universities, should always focus on the improvement of learning environments (Abualrub, Karseth, & Stensaker, 2013). In the USA, the National Centre for Educational Statistics (2011) also outlined learning environments as the main issues all higher education institutions should emphasize when setting their development plans (Abualrub et al., 2013).

Studies into learning environments have recently become a key area of research due to the increased interest of educational researchers in the issue. During the 1990s, with the rise of constructivism represented in the paradigm shift from teaching to learning, more and more researchers (Abualrub, 2014; Abualrub et al., 2013; Groff, 2013; Jonassen and Land, 2012; Juceviciene et al., 2010; Koper, 2014; Lalingkar, Ramnathan and Ramani, 2015; Scott-Webber, Branch, Bartholomew and Nygaard, 2014; Spector, 2014) analyze learning environments as a major determinant of students' learning. Nowadays the mission of any educator is undergoing a shift in focus from teaching to the production or facilitating of learning by whatever means work best. To tackle this issue, a reasonable approach could involve understanding, analyzing, designing and managing learning environments.

As regards higher education, the discussion of learning and educational environments has gained much attention and this issue is widely researched by educational researchers at Kaunas University of Technology (Juceviciene, 2007; Juceviciene, Gudaityte, Karenauskaite, Lipinskiene, Stanikunienė, Tautkeviciene, as cited in Juceviciene et al., 2010) for over a decade. Considering the fact that generations change and learners have unique characteristics that differentiate them from the earlier generations, it is essential that educational environment is constantly researched and reconsidered. Understanding what the learners are learning within a particular educational environment is also prerequisite.

Nowadays, the research into university educational environment is especially important for higher education institutions preparing to meet the new generation of learners – Generation Z. This generation is more than ever before technology-savvy and competent individuals usually very obsessed with the virtual world and remote from social realities. They tend to use their own digital environments that inevitably influence their learning and understanding. For universities that seek to be influential, it poses a great challenge. When accepting this challenge, it is important to clearly understand the conception of learning environment and the teaching-learning relationship.

First, the concept of 'learning environment' has been introduced by researchers in Computer Science. For a long time it was understood as having a dual meaning: as an educational environment developed by the educator and as an overall learning environment accepted and used by the learner. Educational scientists (Juceviciene, 2007; Lipinskiene 2002; Tautkeviciene 2004) have introduced more specific terms and proposed a comprehensive picture of research into learning environment. First, *educational environment* is the one that is developed by an educator with a clear aim to facilitate acquisition of knowledge, skills, attitudes and values. Second, *potential learning environment* contains all the surrounding information, performance, situations, experiences or engagement in activities with other people that involve information exchange. This environment may be characterized by different kinds of information (analog, visual, oral, digital) and communication channels. Thus, this type of environment merely has a potential for learning and it is the widest in the sense learning environment can be understood. Third, specific for each learner, *personal learning environ-*

ment is determined by his/her personal goals, abilities, needs, and experiences, it is like part of information space that is recognized and used as one's learning environment. This environment encompasses the particular information targeted at a learner, communication tools and methods acceptable to that learner as well as other things and people acting in that environment. Personal learning environment can be composed of potential learning environment and educational environment. Referring to the ideas of constructivism, individuals learn in interaction with his/her personal learning environment.

In the discussions of educational environment the most important idea is to facilitate and enhance students' learning. Thus, in order to achieve this goal, it is important that the educational environment, created by an educator and serving as a complex empowering factor for a learner, determines the formation of personal learning environments. Currently, this issue is not being widely researched by educational researchers and requires a more thorough discussion. Therefore, the scientific research problem in the current article is the following: what should university educational environment be like in order to meet the needs and expectations of Generation Z. The article aims to discuss issues that should be reconsidered by educators when developing educational environment so that it would become an influential part of personal learning environment for the learner of Generation Z.

In terms of conceptual approach, the article relies on contemporary constructivist, sociocultural and situated conceptions of learning that share the following ideas:

1 learning is a process not of knowledge transmission but of meaning making (Jonassen & Land, 2012):
   - by interacting with other people and artifacts,
   - by continuously trying to make sense of those interactions.
   - Meaning is constructed from knowledge, by resolving the dissonance between what we know and what we want or need to know;
   - meaning does not exist independently of context, context shapes and defines meaning.

2 learning is a dialogue, a process of internal and social negotiation, a socio-dialogical process (Jonassen and Land, 2012).

Based on the literature review, the article consists of three parts. First, the task is to explore the most common characteristics of the new generation of learners by dividing them into two groups: those which have a positive impact on their learning and those which have a negative one. Second, it examines the concept of university educational environment. Third, it investigates the features of university educational environment that could be acceptable for the learners of Generation Z in higher education.

The most common characteristics of Generation Z

Since the new generation of learners entering universities are different in their characteristics and learning, the most common characteristics of Generation Z will be the starting point of the research into the educational environment within which they learn. According to generational theory first popularized in the United States and picked up quickly by Western world, population is classified into age groups according to the time period in which they were born. There is disagreement about the time of birth for Generation Z, in addition, different titles for this generation have been proposed. Also, as stated by Codrington (2011), there are differences when applying this theory to a variety of countries across the world because of historical, social, cultural and political differences. The present article relies on the classification proposed by Peciuliauskiene, Valantinaite & Malonaitiene (2013) stating that Generation Z starts with those born after 1995 – the date indicated by Western sociologists. His-

torically, the title given to this generation may refer to the fact that the previous generation was dubbed Generation Y, however, there are also other catchy labels for the new generation used in public – the App Generation, iGens, the @generation, the Selfie Generation, Rainbow Generation ('Why bosses', 2015), Post-Millennials (Oblinger and Oblinger, 2005).

Since the previous generation - Generation Y - were called the first generation of digital natives (Palfrey and Gasser, 2013) born into and raised in the digital world, we can still continue talking about the second generation of digital natives - Generation Z - due to the fact that they were also 'born digital' (Palfrey and Gasser, 2013) and 'are all "native speakers" of the digital language of computers, video games and the Internet' (Prensky, see Helsper and Enyon, 2009, p. 1). It is obvious that there are many common characteristics between the two last generations, with heavy reliance on technology and being constantly connected to the Internet as the most significant ones. However, Generation Z have also some distinctive characteristics, which can be relatively classified into those that positively influence their learning and those that have a negative impact on it.

Considering formal learning in the classroom and the fact that learners have access to many networked devices, it is obvious that neither learners nor education institutions can imagine learning without modern technologies; however, at the same time, most educational institutions are already 'confused about what to do about the impact of technology on learning' (Palfrey and Gasser, 2013 p. 238). As the authors (ibid) explain, there have already been attempts to block the Internet access in the classrooms. With access to wireless Internet on campuses, students stay online all the time and even during lectures they find ways to be constantly connected in order to chat on Facebook, read news, send instant messages, access their favorite sites, play online games and not engage in activities as expected by an educator. Clearly, ban of digital devices during lectures or situating someone at the back of the room to keep an eye on their screens is not a solution for the latest link in a generational chain. Educators should think of different ways to harness technology that learners have at their fingertips for it to serve as a valuable tool in their educational environment.

With regard to both the first (Generation Y) and the second (Generation Z) generations of digital natives who were born and raised in technology rich environment, there is 'a hypothesized change in the brain structure that means young people think and process information in fundamentally different ways compared to older generations' (Prensky, see Helsper and Enyon, 2009, p. 1). According to Prensky (ibid), these generations 'are used to receiving information really fast, ...like to parallel process, ...prefer their graphics *before* their text rather than the opposite, ...prefer random access (like hypertext), ...function best when networked, ...thrive on instant gratification and frequent rewards, ...prefer games to "serious" work'. The way digital natives gather information is "through a multistep process that involves grazing, a 'deep dive', and a feedback loop" (Palfrey and Gasser, 2013 p. 241). By 'grazing', the authors mean that students are bypassing huge amounts of information on a daily basis, for instance, headlines of the news on Facebook on a smartphone or a computer. By clicking on any of them, a student takes a 'deep dive' going beyond the headline. Finally, a student reacts to the piece of news publicly, remakes or retells it, for instance, by writing a post for a blog or commenting it online.

If online search engines and social media were defining technology of Generation Y, now tablets, smartphones and visual media are the ones that define Generation Z ('Knoll workplace research', 2014). It means that this generation is even more technologically advanced and equipped usually with more than one device at the same time. In addition, 'Generation Z are also the first generation to have the ability to be truly connected 24/7' (Cowan, 2014, p. 18). This suggests that everybody has an even greater access to digital sources of information.

According to Oblinger and Oblinger (2005, p.12), 'the Internet is like oxygen; they cannot imagine being able to live without it', it is like a vehicle for interaction. It is evident that the Internet has radically changed the way students gather and process information. Moreover, as stated by Cowan (2014), we live in the age of big data, and 90 percent of all the information on the Internet ever produced has been created in the past two years. Learning to analyze such huge amounts of data may hold great rewards. As far as the amount of information they get is concerned, the mighty Internet provides learners with much more information than earlier generations could get in the analog world.

Furthermore, Generation Z have poorer face-to-face social and conflict resolution skills, are susceptible to distractions, requiring blended online/face-to-face collaboration, valuing an organized, structure workplace and predictability, having strong multi-tasking skills with reliance on social media ('Knoll workplace research', 2014). However, 'a growing body of evidence suggests that this multi-tasking is detrimental to learning and cognitive development' ('Knoll workplace research', 2014, pp.3-4). For instance, a student may attempt to read information from a page of their textbook on a tablet or even a smartphone while viewing an online video related to another homework assignment on his/her computer screen and/or while continuing texting friends at the same time. Clearly, being bombarded with too much information from different sources at the same time may hinder students' ability to concentrate on one specific task and may result in poorer quality of learning. As regards face-to-face social skills, Generation Z have poorer such skills because they spend even bigger portions of their social life online as compared to earlier generations. Social media technologies are at the centre of students' social world rather than supplementing face-to-face relationships ("Knoll workplace research", 2014). The students are constantly connected to the Internet thus spending most of their lives in the digital environment. With a bigger online experience, Generation Z may feel more comfortable in online academic communication and collaboration and fall behind earlier generations in social skills.

Interestingly, Targamadze (2015) identifies the following features of Generation Z: growing hyperactivity, infantilism (lack of maturity), communicative, multimedia literacy, social autism, consumerism, lack of skills in analytical evaluation of a text and rendering its meaning, individualism, unwillingness to work in groups, Internet addiction, lack of self-confidence, social media addiction, distraction, different ways of reading and thinking, restriction of interest only to such activities that are interesting and relevant to them, preferring intensive work, curious, result oriented, impatient, usually not able to complete their work, etc. If earlier a text was used to be read line by line which resulted in easier understanding of it, the present method of reading follows the pattern of a loop way that is similar to reading websites on the Internet where every click on the mouse opens a new site (Targamadze, 2005, p. 97). As the author explains (ibid), reading a hypertext is more difficult, a student is able to remember just the keywords and is subjected to bigger cognitive loads, which results in a more superficial way of acquiring information, lack of analytical and critical thinking and difficulties in understanding. As Cowan (2014) explains, Generation Z prefers watching videos instead of reading, with YouTube greatly influencing their lives. Social autism is interpreted as not a psychological disorder but the way to escape from the real world because of loss of social skills for face-to-face communication (Targamadze, 2015, p. 97). Infantilism suggests that adoption of it may hinder learners from a serious approach to learning and their performance at universities. As stated by Maeder ('Understanding Generation Z: Attracting and Retaining Future Talent in China', 2014), 'the typical Generation's Z instinct is to pursue speed instead of accuracy'. Similarly, Cowan (2014) warns that this generation has on the fly learning ability, which means that they learn quickly without preparation or thinking much or even while doing something else.

Also, Cowan (2014) lists the following characteristics of Generation Z: overprotected, worldly, pragmatic, connected, creative, pressured and communitarian. In the explanation of overprotected, the author (2014, p.16) states that this is 'because their parents have been diligently sweeping away the ice that lies in their path'. The question inevitably arises whether they will demand the same atmosphere to be created at universities. By worldly, the author (ibid) means that this generation travels a lot and communicates with people from all around the world thanks to unlimited opportunities the Internet offers. As stated by the author (ibid), this generation uses smartphones as an extension to their body, i.e. they even use images and videos from them to illustrate their points. However, 'as they strongly develop their skills for navigating and using information, their base level of factual knowledge often remains naïve' (Cowan, 2014, p. 16). This allows to make an assumption that this generation do know where to find information but that does not mean that they really possess necessary amounts of knowledge. As regards creativity, Cowan (2014, p. 10) calls this new cohort of people an Artist generation because 'they tend to be the one to produce, historically, the most challenging, thought provoking art'. The author (2014, p.16) also warns that Generation Z tends to learn more from the peer groups rather than parents and 'their communitarian inclinations are due to rebelling against a sheltered upbringing' when they were constantly monitored by their parents. Accordingly, one may assume that the new generation of learners would be more satisfied if given more freedom.

According to the national survey undertaken by Northeastern University in the United States of America ("Innovation Imperative", 2014), Generation Z are pluralistic, highly entrepreneurial, believing that it is important for colleges to teach entrepreneurship, expecting to work for themselves during their careers. They prefer a traditional undergraduate experience augmented in innovation that offers hands-on experience and practical skills, expect higher education institutions to allow them to design own course of study or major (ibid). According to the results of this survey (ibid), Generation Z are self-reliant but troubled about the future. Cowan (2014, p.12) also warns that Generation Z "are quite vulnerable when life throws up challenges and difficulties". Thus, the need for complete self-reliance is questionable.

To conclude, Generation Z is similar to the previous generation – Generation Y – in terms that both generations were born and raised in technology rich environment that has resulted in perfect digital literacy and heavy reliance on technology. Considering the most common characteristics of Generation Z discussed above, positive influence on learning seems to be exerted by greater technological advancement, reliance on a bigger number of constantly connected devices and possession of numerous sources of information, feeling comfortable in online communication and collaboration, worldliness, strongly developed skills for navigating and creativity. In contrast, the characteristics that may be detrimental to learning are: being susceptible to distractions, having strong multitasking skills, loss of face-to-face communication skills, loss of social skills, infantilism, individualism, different method of reading, the feeling of being overprotected, preference for games instead of serious work, vulnerability when facing challenges and difficulties in real world situations, impatience, and preference for speed instead of accuracy.

Educational environment

As claimed by Frensch and Funke (2014), there is a tendency that for any domain of research a number of similar meaningful definitions coexist. Considering the concept of learning environment, it can be observed that most researchers define it depending on the specificity of the research conducted. It is evident that when conceptualizing what constitutes the learning environment, there are overlapping components. In their conceptions, researchers tend to

highlight location where learning takes place: physical, virtual or hybrid (or even conceptual). Some of them also include teaching and pedagogy among the components. Some researchers distinguish between natural and purposefully created conditions for learning. Learning is acknowledged as the most prevalent component by researchers. However, their views differ in respect of formal, non-formal and informal learning; some researchers do not include informal learning in their conceptions or merely ignore it. Clearly, there are different concepts and different understandings of learning environments used, and a wide range of considerations are implied. Moreover, while addressing the issues of learning environments, educational researchers also label them as learning space, educational environment, educational setting, academic environment, educational learning space, educational space, educational climate, academic environment, etc. However, the current article is based on the classification centered on potential learning environment, personal learning environment and educational learning environment, the latter being directly related to the university educational environment, and therefore studied and analyzed in the present article.

Considering the environment that is intentionally designed for the purpose of education, to empower and engage a learner into study activities, Juceviciene indicates that the term 'educational environment' emerged in Educational Sciences (Pimparyon, Caleer, Pemba, 2000; Roff, McAller, and Skiner, 2005 as cited in Juceviciene, see Duobliene et al., 2013). The term was distinguished from the description of learning environment. According to Juceviciene (2007)*, educational environment* can be defined as dynamic spaces of information for learning and performance, which are developed and influenced by an educator and determined by educational aims, relevant content, methods and aids, also including other objects and people in the environment that somehow affect a learner, educational information and the way it reaches a learner. A learner learns in this environment and it is a constituent part of his/her personal learning environment. Thus, educational value and impact on individuals so as to involve them in study activities are of major importance here. Juceviciene (2007) relates educational environment to the institutional level, while learning environment can be related to the individual level.

As explained by Juceviciene and Tautkeviciene (2004), in a perfect situation educational environment fully coincides with the learning environment of a learner (maximum effectiveness from the institutional point of view); however, overlapping may be limited or these environments may totally mismatch, meaning that the educational impact is not relevant to the learner. Even if a learner may be present in the educational environment with the educator willing to empower his or her learning, no learning can occur in such environment, or just a limited degree of educational impact can be made on each individual learner.

In addition, as Juceviciene (2007) claims, there is a difference between what is commonly understood as a pedagogical system (learner, educator, educational aim, methods of teaching, content, instruments, etc.) and educational environment. As the author (ibid) states, initially the pedagogical system is devised as a 'paper-work' and then realized in an environment. The pedagogical system emphasizes the relation between formal aspects of the pedagogical system expressed through psychological, didactic, material and competence conditions. In educational environment, of which pedagogical system is only part, an educator communicates with a learner and their communication is additionally influenced by other things and subjects of the educational environment. As explained by Juceviciene (2007), teaching and learning processes depend on three aspects: the pedagogical system (devised a designed educational project), the educational environment (an educational reality), and the learning environment (a reality used by a learner), and three aspects are interrelated.

From the perspective of an educator, irrespective of the fact that one specific educational environment is created for all learners, each learner may create his or her personal learning environment in the same educational environment grounded on his/her own perceptions, goals, motivation, abilities, knowledge, etc. For instance, the number of the learners participating in the study process in one educational environment may be the same as there are different personal learning environments (Juceviciene at al., 2010). The authors agree that personal learning environment is specific for each individual and that it is the environment within which learning takes place in reality, and that learning experiences are a blend of both formal and informal learning there.

Furthermore, many educational researchers (Drew and Klopper, see Scott-Webber et al., 2014; Juceviciene et al. 2010; Jacobson and Kapur, see Jonassen and Land, 2012) agree that environments in which learning takes place are indeed complex systems with multiple contexts and particular processes. To support this viewpoint, Lindner (2008, p. 1) claims that it is necessary to acknowledge the fact that 'not only chronologically consecutive settings but also coexisting learning environments; educational processes take place within a multitude of settings. More or less learning happens within a complex interwoven network of different consecutive and side-by-side settings with different interconnections and transitions between them.' After reviewing many other definitions of learning environments, Abualrub et al. (2013) suggest the network perspective in conceptualizing what learning environment is. It is the environment 'stretching beyond any particular organizational boundaries' and 'consisting of virtual, open and accessible resources' (Abualrub et al., 2013, p. 99). The main focus here is that learning takes place in different contexts that form network configurations determining the specific learning environment (Abualrub et al., 2013). In addition, personal configurations of networks are very dynamic and time sensitive. Therefore, not only learning itself is complicated to understand, but also the learning that takes place within the environment and its impact on learning also present big challenges for educators.

In conclusion, university educational environment is only part of students' personal learning environments, which are complex interwoven networks of learning environments specific for each learner. The more of the university educational environment is accepted by a learner, the greater the impact of the educator on the learner. University educational environment is a very complex system whose design and control may become a true challenge for an educator.

University educational environment for the learners of Generation Z

Given what we know about Generation Z, many relevant assumptions can be made about university educational environment that is directly aimed to enhance and facilitate their learning. Since the present generation of learners continue to be so remarkably dependent on technology and are the most digitally savvy generation, universities must rely on a variety of the latest technologies, also allow learners to use their own devices during the lectures to make them be actively engaged in the process of learning. Blocking access to the Internet during the lectures is not a solution. Moreover, educators should emphasize the time given to fulfill a task and ensure a fast tempo during classes because students like it. Working in a fast tempo may prevent them from distraction and multitasking with greater concentration on tasks assigned by educators.

Examples of specific IT applications that could be suitable for Generation Z are as follows: a variety of digital resources that provide a number of options, integration of modern virtual learning platforms ensuring various forms of communication and interaction into educational environment, use of collaborative work tools, use of a variety of latest apps, especially the ones that are popular with students, etc. Also, mindtools could be a perfect solution to

Generation Z. The concept of *mindtools* is dating back to 1995 and is central to Jonassen's educational philosophy that blends constructivism principles with modern educational technology. These are tools that can be used to extend cognitive function, learning tools that learners learn with, not from. For instance, an influence diagram is a graphic representational tool that enables learners to conceptualize complex inter-casual relationships when solving problems. Considering the fact that Generation Z are even more technologically advanced, educators should allow freedom in choosing technological solutions that could be suitable for their studies. Clearly, technological advancement and students' heavy reliance on technology has greatly affected the ways in which new generation of learners learns and probably the nature of learning itself. However, technology alone, no matter how smart it is, will not make educational environment an empowering tool for an educator, as there are other important aspects to be reconsidered while creating university educational environment.

Considering constructivist theories of learning, educators should engage learners in active learning. Traditional lectures should be replaced with new educational methods, such as learning contracts, case related tasks and collaborative paper assignments (Lizzio et al., 2002), flipping the classroom (Bartholomew, see Jonassen and Land, 2012), project-based learning, problem-based learning, peer-to-peer learning, small group discussion, team presentations (Scott-Webber et al., 2014), object-based learning, image-based learning, research-based learning, collaborative problem solving (Yin and Abdullah, 2013), etc. These are student-activating methods ensuring active engagement, where knowledge is constructed by means of authentic assignments when learners select, interpret and apply knowledge. In the process, learners themselves make their own meaning, i.e. they develop their own conceptualizations of what they are learning, physically make neural connections in the brain, whereas such passive methods as, for instance, listening do not require any neural connections and conceptualizations from learners. Evidence is available to prove that knowledge is constructed only when learners are actively engaged in the process of their own learning. Therefore, the conventional belief that knowledge can be transferred through presentation of information should be given up. Educational environment should be the space where students learn rather than where educators present the content.

According to Higher Education Policy Recommendations ('Innovation Imperative', 2014), higher education institutions should expand experiential learning promoting meaningful, career-aligned learning opportunities. As Generation Z prefer active learning, they should be offered styles of learning that suit them well - discovery, exploration, experimentation, criticism and analysis. Educational environment should include learning through action and experience and learning by doing.

It is important to make learners feel the most important in the educational environment (student-centered approach), since it meets their characteristics. Being actively engaged in their studies, students will adopt deep approach to their learning and will be empowered to think critically, which would inevitably enhance their learning outcomes. According to the 3P Model of Learning proposed by Biggs, a learner is influenced by both personal and situational factors when adopting a specific approach to learning, which affects learning outcomes. Educators should think of different ways to make each individual to be engaged in and feel an important part of a particular educational environment so that it would becomes acceptable to the learner. Also, taking greater responsibility for their learning should be encouraged.

Ability to move back and forth (sometimes rapidly) between real and virtual spaces should also be anticipated by educators. For instance, even during a lecture a learner may be asked to spend some time both in physical learning environment and switch to virtual learning en-

vironment. It is evident that students like such switching. Since Generation Z learners prefer using digital resources, they may even dislike the fact that they are offered to read from a sheet of a paper. Therefore, educators should be flexible in providing hybrid educational environments (both for synchronous and asynchronous learning) for the course. Using a variety of digital devices, today's learners can turn almost any space outside the classroom into an informal learning space; therefore, 'similar to the traditional classroom, educators have an important opportunity to rethink and redesign these non-classroom spaces to support, encourage, and extend students' learning environment' (Brown, see Oblinger and Oblinger, 2005, p.176). It means that learning can take place anywhere and at any time.

Educators should also involve learners themselves in devising new ways to support their university educational environment and promote self-improvement by all ways possible. To encourage learning, university virtual educational environments should offer not only class materials and tools but also additional ones for individual self-study or collaborative learning outside the formal classroom. When classes end, learners should be given opportunities to use various physical environments for real-time collaborative study. And more importantly, it has to be anticipated that students spend far more time in such environments than in the classroom. As proposed by Brown (see Oblinger and Oblinger, 2005), educational environment should encompass classroom, informal and virtual environment as a single, integrated environment. 'We should not neglect the informal for the formal, or assume that ... students somehow will figure out the virtual space on their own. We should connect what happens in the classroom with what happens in informal and virtual spaces' (Brown, see Oblinger and Oblinger, 2005, p.180). The traditional model of university that provides most of its services physically on campus should change. Increasingly, learning takes place outside the classroom schedules, and the role of an educator is important both in physical and virtual educational environments.

As concerns online educational environment (part of educational environment developed by an educator online), it must not resemble lecture-based classroom approach that offers passive learning. In most cases, educators just upload their PowerPoint presentations which neither give an opportunity for active knowledge construction and self-regulated learning nor ensure interactivity. While evaluating preferences of the new generation for digital environment, educators should think of different types of assignments that could supplement face-to-face learning, promote self-improvement as well as lifelong learning and satisfy learners' curiosity.

Since learning is a dialogue and knowledge resides in the discourse among individuals, it is also important that collaboration is ensured both in face-to-face communication and in online environment. Constructivist and social learning theories emphasize educational benefits of collaborative learning. As stated by Vizgirdaite (2013, p.53), 'students who learn through collaborative learning... have more positive attitudes toward the subject matter, increased motivation to learn more about the subject, like the instructor more, and are better satisfied with their overall learning experience ... also perceive higher gains in their own personal development'. Being more individualistic, Generation Z risk not to benefit from collaborative learning and here the task of educators is to encourage active collaboration between learners in both physical and online educational environment.

In contrast to the virtual learning environment that is changing at a rapid pace and has a relatively short history of emergence, the physical learning environment is very similar to what it used to be long time ago and classrooms are the least changed part of educational environment. As stated by Scott-Webber et al. (2014), we have 21st century students, 20th century teaching practices and 19th century learning spaces. For empowering educational environ-

ment, physical affordances (affords the opportunity to perform an action - the term coined by psychologist Gibson) should also be reconsidered, such as the possibility to arrange seats in a way that allows group work, offering various other physical locations not just traditional classrooms with the row-by-column seating all facing forward (Scott-Webber et al., 2014). As explained by Scott-Webber et al. (ibid), choice here is important and educators should think of a variety of learning places that would allow active learning, engagement and interaction.

Since learning is a socio-dialogical process, educators should not only participate in an active dialogue when communicating face-to-face, it is important that an active dialogue between both sides continues in multiple virtual environments. Feedback from the educator should be provided on every task in virtual environment. It is inevitable to bear in mind that learners need constant feedback on their work; also, they are very impatient insisting on very quick feedback. Educators should think of new ways for both asynchronous and synchronous virtual communication.

With reference to the tremendous amount of sources of information available to Generation Z, educators should think of the ways how to make portions of that information relevant to their studies not just to bypass them without 'diving' deeply into them. Even though learners navigate and find information very quickly, it is necessary to make them analyze it critically and perceive studies at universities as a serious work that requires much effort and time in the preparation prepare for future and career.

As regards learning outcomes, it is important that learners are not asked to memorize huge amounts of information. Instead, being able to find new information whenever it is necessary and being capable to understand it should be prioritized as learning outcomes. It is essential that today's learners start thinking critically and become problem-solvers being able to solve real life problems. As explained by Clayton-Petersen (see Oblinger and Oblinger, 2005, p.137) 'future careers will require higher levels of education than in the past. That education must enable individuals to discover what they need to know rather than just having static knowledge. Society will need ... mental agility and adaptability'.

As Keeling and Hersh (2011, p. viii) claim, 'there is not enough higher learning in higher education' and this is a critical problem that requires our attention. Therefore, educational environment has not fail to ensure enough quantity and quality of true higher learning (preparation to think critically and creatively, solve problems, accept responsibility, comprehend complex issues, preparation for analytical reasoning; helping students become qualitatively different people) – learning that prepares Generation Z to meet and excel at the challenges of work, life, and citizenship (Keeling and Hersh, 2011). Learning should be the first priority when developing university educational environment.

If earlier educational environment was based on 'a factory-like, "one size fits all" model' where 'talent was developed by weeding out those who could not do well in a monochromatic learning environment' (Brown, see Oblinger and Oblinger, 2005, p.177), constructivist learning theories now suggest moving to a tailored, option-rich educational environment. This is what Generation Z expects their educational environment to be.

For Generation Z the choice of what, where and how to study is vital. It increases learners' motivation and responsibility. According to Rowley (see Scott-Webber et al., 2014; p. 58), teachers 'are experiencing an era of student-led curricula, research teaching and learning. Students will take what they want from where they choose – whether it be knowledge, practice or research'. The role of educators is 'assisting student's choices and helping them to organize and make sense of the content by relating content to real life experiences' (Rowley, see Scott-Webber et al., 2014; p. 58). Educators should also play active role in 'providing authentic learning environments and designing their practice to include rich learning that

engages higher order learning skills, not just passive learning such as watching a video and answering questions' (ibid). Clearly, freedom of choice makes educational environment dynamic and flexible. Developing a modern educational environment presents a challenge because, unlike a pedagogical system that can be written on paper before a particular course starts, educational environment is created at a concrete time in a concrete place with the purpose to influence the learners.

To conclude, the ideas discussed in this section could be applied in order to bridge the gap between educators who create educational environment and the new generation of learners. They could be useful both for developing educational environment that meets their needs and expectations and involves learners in active knowledge construction. It is time for educators to reconsider educational environment as Generation Z will soon predominate at all universities.

Conclusions

Generation Z are the most tech-savvy generational cohort relying on a bigger number of constantly connected devices, possessing numerous sources of information at their fingertips, having strongly developed skills for navigating and being able to sort quickly through enormous amounts of information. In addition, they feel comfortable in online communication and collaboration and tend to spend even more time online than in face-to-face communication. Generation Z are creative and even called generation of *artists*. These are the characteristics that may have a positive impact on their learning and learning outcomes.

However, at the same time educators should be concerned about the emerging characteristics of Generation Z that may hinder their learning process: being susceptible to distractions, having strong multitasking skills, loss of face-to-face communication skills, infantilism, individualism, different method of reading, lack of skills in analytical evaluation of a text and rendering its meaning, lack of self-confidence, growing hyperactivity, feeling overprotected, preferences for games instead of serious work, vulnerability when facing challenges and difficulties in real life situations, impatience, and preference for speed instead of accuracy. Educators should think of ways to reduce the influence of these characteristics on their learning within university educational environment.

In order to develop educational environments that meet the needs and expectations of Generation Z and facilitates their learning, these ideas should be reconsidered:

- A modern university educational environment must not be understood as a very narrow scenario happening within physical university environment with the emphasis on formal learning only. Non-classroom spaces should be redesigned to support, encourage, and extend students' learning. It is important to ensure time flexibility, flexible places and spaces for learning. When given a greater freedom of choice, each individual learner may select what is acceptable to him/her, thus, diverse university educational environments may satisfy a bigger number of learners studying within the same university educational space.
- Educators should make learners feel the most important part in the educational environment (student-centered learning environment) in order to ensure students' deep approach to learning and greater responsibility for learning outcomes.
- University educational environment should not fail to ensure enough quantity and quality of true higher learning to help students to become qualitatively different people.
- Students should be engaged into active learning to a greater extend and offered a greater variety of student-activating methods. Generation Z should be offered styles of learning that suit them well - discovery, exploration, experimentation, criticism and analysis. They will learn more effectively if they are engaged to solve problems and find

solutions. University educational environment should place greater focus on problem solving since problems provide a purpose for learning. Engaged in solving problems, students construct knowledge that is better retained, easier integrated and more transferable. Experiential learning promoting meaningful, career-aligned learning opportunities should be expanded.

- Educators should ensure possibility to move back and forth between real and virtual spaces in educational environment. They should encourage active collaboration between learners in both physical and online educational environment. The learning mode should be collaborative and based on dialogue.
- This generation will be engaged and at the same time bored with technology, therefore, educators should think of new ways to employ technology. For instance, mindtools can be used to extend cognitive function; they are technological solutions that learners learn with, not from. Examples of mindtools are visual representation tools (semantic networks, influence diagrams, system modeling), spreadsheets, online conversation tools, collaborative writing tools, screen sharing, voiceboards, 3D learning environments, word clouds, web based action mazes, virtual conferencing, databases, screencasts, etc. Generation Z will prefer visual learning over the other styles of learning.
- Online educational environment should not be for passive learning, educators should think of new ways to supplement face-to-face learning, promote self-improvement as well as lifelong learning. A more active engagement of educators in virtual communication is critical. Generation Z requires constant and quick feedback; it is important that they do not to feel alienated online.

To conclude, understanding Generation Z, the way they learn, and designing educational environments containing a multitude of variables are very complicated tasks. In addition, while implementing changes educators may face many challenges, for instance, unwillingness to accept changes, lack of time, increased amounts of time to prepare or to communicate with students, stressful situations because of being less technology savvy, going into conflicts with the administrative staff, who usually give priority to research activities and outcomes rather than improving educational environment. The most important step for any educator is continual professional growth and a willingness to learn together with the students and from each other.

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Santrauka

Evelina Jaleniauskienė, Palmira Jucevičienė. Kitoks žvilgsnis į Z kartai skiriamą universiteto edukacinę aplinką

Išsami edukacinės aplinkos analizė ir tinkamas jos planavimas gali būti svarus įrankis, leidžiantis veikti sėkmingiau tiek studentams, tiek patiems universitetams 21-ajame amžiuje. Būtinybę skirti daugiau dėmesio mokymosi ir edukacinėms aplinkoms taip pat pabrėžia ir aukštojo mokslo švietimo politikai. Atsižvelgiant į tai, kad kartos nuolat keičiasi ir jų atstovai pasižymi naujomis savybėmis, svarbu nuolatos pergalvoti ir atlikti tyrimus, susijusius su edukacine aplinka. Pagrindinis šio straipsnio tikslas yra aptarti, į ką reiktų atsižvelgti universitete, kuriant edukacinę aplinką studentams, atstovaujantiems Z kartą, kad ši aplinka studentų būtų priimama ir taptų svaria kiekvieno studento asmeninės mokymosi aplinkos dalimi. Remiantis mokslinės literatūros analizės metodu, šiame straipsnyje visų pirma yra aptariamos naujosios kartos savybės, susijusios su jų mokymusi, išskiriant jas į dvi grupes: teigiamai veikiančiomis mokymąsi ir sąlyginai galinčiomis turėti neigiamos įtakos. Taip pat dėmesys skiriamas paaiškinti universiteto edukacinės aplinkos sąvoką; aptariami edukacinės aplinkos pokyčiai, kurie galėtų tenkinti Z kartos poreikius ir lūkesčius bei palengvintų mokymąsi.

Z karta yra labiausiai technologiškai pažengusi karta, „apsiginklavusi" daugybe įvairių įrankių, turinti nuolatinį interneto ryšį, gebanti greitai surasti norimą informaciją ir apdoroti didelius jos kiekius. Ši karta yra labai kūrybinga (netgi vadinama „menininkų" karta), pasikliaujanti ir lengviau besimokinanti naudojant vaizdinę informaciją, saugiai besijaučianti virtualiai bendraujant ir bendradarbiaujant, netgi linkusi daugiau savo studijų laiko praleisti virtualioje erdvėje nei „akis į akį". Šie naujosios kartos bruožai gali turėti teigiamą įtaką jų mokymuisi ir mokymosi rezultatams. Svarbu, kad kuriant universiteto edukacinę aplinką būtų tinkamai ir apgalvotai pasinaudota šiomis savybėmis.

Tačiau yra ir nerimą keliančių Z kartos savybių, apie kurias turėtų susimąstyti ir būti pasiruošę jas įveikti universiteto dėstytojai - edukacinės aplinkos kūrėjai. Šios savybės yra polinkis į išsiblaškymą, dėmesio trūkumą ir paviršutinišką informacijos priėmimą, koncentravimąsi į kelių užduočių ar darbų darymą tuo pačiu metu, nemokėjimas bendrauti „akis į akį" su bendraamžiais ir dėstytojais, infantilizmas, individualizmas, augantis hiperaktyvumas, skirtingas skaitymo būdas, kai skaitoma ne tradiciniu būdu, o nuo viršaus į apačią, lyg visą laiką būtų skaitomi interneto puslapiai, nesugebėjimas kritiškai mąstyti ir tinkamai apdoroti informacijos, taip pat pasitikėjimo savimi trūkumas, užduočių atlikimas lyg žaidžiant žaidimus, nemokėjimas tinkamai elgtis realiose gyvenimo situacijose, nemokėjimas spręsti realių gyvenimo problemų, nekantrumas, noras viską atlikti greitai, o ne kruopščiai ir tiksliai. Akivaizdu, kad universiteto dėstytojams, kurie yra ankstesnių kartų atstovai, pergalvojant universiteto edukacinę aplinką Z kartai, būtina žinoti, kurios naujosios kartos atstovų savybės gali kliudyti sėkmingai mokytis ir siekti gerų rezultatų.

Kuriant universiteto edukacinę aplinką Z kartai, visų pirma svarbiausia, kad joje išliktų pakankama kokybė ir kiekis tikrojo aukštojo mokymosi – pasiruošimo kritiškai mąstyti, prisiimti atsakomybę už savo mokymosi rezultatus skatinimas, gebėjimo kūrybingai ir atsakingai spręsti problemas ugdymas. Svarbu, kad aukštasis mokslas svariai prisidėtų prie Z kartos tapimo atsakingais piliečiais ir aukšto pasirengimo lygio profesionalais.

Nors naujoji karta yra linkusi į individualizmą, svarbu ją skatinti aktyviai veikti bendradarbiaujant tiek fizinėje aplinkoje, tiek virtualioje, siekiant geresnių mokymosi rezultatų. Atsižvelgiant į tai, kad Z karta turi labiau išvystytą smegenų dalį, atsakingą už vizualios informacijos apdorojimą, svarbu nepamiršti mokymosi procese teikti pirmenybę vizualiai informacijai. Taip pat tradicines paskaitas turėtų papildyti kuo daugiau įvairesnių aktyvaus mokymo metodų, kurie padėtų šiai kartai aktyviai kurtis savo žinias santykyje su aplinka. Virtuali edukacinė aplinka neturėtų būti skirta pasyviam mokymuisi, ten sudedant vien tik paskaitų pateiktis. Pačios technologijos ir nuolatinis nesiskyrimas su jomis dar neužtikrins sėkmingo naujosios kartos mokymosi. Dėstytojai turi išradingai jas įdarbinti studentų mokymosi procese, kad būtų mokomasi ne iš jų, o su jomis. Pavyzdžiui, jas panaudoti kaip proto įrankius (angl. mindtools), didinančius pažinimo procesą.

Svarbu sudaryti didesnes galimybes mokymuisi iš patirties, pasiūlyti mokymosi stilius, atitinkančius naująją kartą – atradimus, tyrinėjimą, eksperimentavimą, kritiką ir analizę. Z kartai svarbu tinkamai pasiruošti sėkmingam veikimui darbo rinkoje. Kartu reikėtų akcentuoti, kad studentai yra svarbiausi edukacinės aplinkos veikėjai, kad būtų užtikrintas giluminis požiūris į mokymąsi ir besimokantieji prisiimtų didesnę atsakomybę už savo mokymosi rezultatus.
Universiteto edukacinė aplinka neturėtų būti suprantamai siaurai - tik tai , kas vyksta pačiame universitete ar auditorijose. Studentams turėtų būti sudarytos sąlygos lengvai „migruoti" tarp fizinės ir virtualios aplinkos. Dėstytojai turi surasti būdų, kaip praplėsti mokymąsi „bet kur ir bet kada", skatinti studentus galvoti būdus, kaip tobulėti patiems, suteikti galimybę patiems reguliuotis savo mokymosi procesą bei skatinti mokymąsi visą gyvenimą. Aktyvesnis dėstytojų ir studentų bendravimas bei dėstytojų pagalba studentui virtualioje erdvėje taip pat neišvengiami. Studentai turi sulaukti greito ir ugdomojo grįžtamojo ryšio, kartu atsižvelgiant į jų individualius poreikius. Jie neturėtų būti palikti vieniši virtualioje mokymosi aplinkoje, o jausti, kad kažkas juos ten palaiko ir nukreipia tinkama linkme. Z karta mokysis daug efektyviau, jei jų mokymasis bus paremtas problemų sprendimu. Problemų sprendimas yra pati autentiškiausia gyvenimiška veikla, todėl ir tinkamiausia veikla, į kurią studentai turėtų būti įtraukiami, o žinios, sukurtos sprendžiant problemas, bus geriau suprantamos, išlaikomos ir perkeliamos. Mokymasis sprendžiant problemas labiau motyvuoja studentus, taip pat lavinamas jų kūrybingumas. Gyvenimas sudėtingėja, todėl ir aukštajame moksle studentai turėtų tikėtis sudėtingesnių mokymosi situacijų, kad mokymasis taptų aktyvia ir įtraukiančia veikla. Prasmingas mokymasis vyksta tik tuomet, kai studentai rodo norą ir turi tikslą mokytis.
Universiteto edukacinėje aplinkoje būtina užtikrinti galimybių įvairovę - įvairius aktyvaus mokymosi metodus, technologinius sprendimus, lankstų užduočių atlikimo ir atsiskaitymo laiką, dinamiškas erdves užduotims atlikti, įvairius vertinimo metodus, įvairius būdus bendrauti ir bendradarbiauti. Tik tokiu atveju visai studentų grupei kuriama edukacinė aplinka atitiks didesnio skaičiaus studentų, studijuojančių toje pačioje aplinkoje, poreikius ir lūkesčius bei taps svaria daugelio jų asmeninės mokymosi aplinkos dalimi. Taigi studentų akademinių studijų sėkmė priklauso ne tik nuo pačių studentų asmeninių, socialinių, intelektinių, dvasinių bei materialinių veiksnių, bet ir nuo kuriamos universitete edukacinės aplinkos, kurioje svarbus vaidmuo tenka dėstytojui ir jo sugebėjimui „sušildyti" naujosios kartos atstovus svarbiausiame jų asmeninio vystymosi etape – studijose universitete. Akivaizdu, kad norint suprasti Z kartą ir sukurti tokią universiteto edukacinę aplinką, kuri atitiktų jų poreikius ir lūkesčius bei palengvintų mokymąsi, universiteto dėstytojams teks susidurti su daugeliu iššūkių. Vienas iš pagrindinių – dėstytojai neišvengiamai turi suvokti būtinybę keistis patys. Svarbiausias uždavinys - išlaikant tradicines aukštojo mokslo idėjas, ugdyti atsakingus ir kilnius, išprususius profesionalus, to siekti kuriant šiuolaikines edukacines aplinkas, suprantamas ir įtaigias Z kartos studentams.

REIKŠMINIAI ŽODŽIAI: Z karta, aukštasis mokslas, edukacinė aplinka.

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