WEB 2.0 TOOLS SERVING NEEDS OF GENERATION Z

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Abstract: This article tries to answer the question, how to use the characteristics of Generation Z learners for their education. The fact that they are born as "digital natives" leads to the conclusion that the Internet should be used in teaching. The best way to incorporate electronic tools and the Internet is to blend them with face-to-face instruction. Learning Management Systems are available to serve teachers and learners and make their efforts easier. Our ideas are supported by the design-based research in the form of a case study. The data of the research were mined by two research tools – a questionnaire and a focus group. The results of our research confirm that if teachers want to follow the principles of the learner-centered approach, they should accommodate their delivery to the learners, i.e. Generation Z.

Keywords: generation Z, blended learning, LMS, Web 2.0, constructivism, connectivism, design-based research, Learner-centered approach

1 Introduction

The first Generation Z learners are graduates now. When they went to schools and universities, did we, teachers, think about their differences from the previous generation? Did we try to assimilate to their needs? If not, it is not too late to do so. At least we should try.

In the educational process, there are usually up to five generations involved, so the generation gap between the teachers and their learners can be remarkably wide. You may be a Millennial taught by a Traditionalist (born 1945 and before). Was your teacher empathetic to your specifics? Did you feel the generation gap?

In this article we try to answer the question, how to use the characteristics of Generation Z learners for their education. The fact that they are born as "digital natives" leads to the conclusion that the Internet should be used in teaching. The best way to incorporate electronic tools and the Internet is to blend them with face-to-face instruction.

Learning Management Systems (LMS) are available to serve teachers and learners and make their efforts easier. They offer the whole scale of tools, which reflect the environment of Web 2.0; moreover, they are user-friendly for both creators of the course and learners as well.

Teaching and learning via LMSs is based on two educational theories, namely constructivism and connectivism, thus it is necessary to be familiar with them. Knowledge constructs and their connections create the base for successful learning under the conditions of blended learning environment.

Our ideas are supported by the design-based research in the form of a case study. The data of the research were mined by two research tools – a questionnaire and a focus group. The results of our research confirm that if teachers want to follow the principles of the learner-centered approach, they should accommodate their delivery to the learners, i.e. Generation Z. To reach this aim they should use Web 2.0 tools, and permanently upgrade and update not only the content of their courses, but also the approaches, methods and techniques.

2 Theoretical Background

2.1 Generation Z

Generation Z is the term that is nowadays accepted as common for the group of people who were born as 'digital natives'. As McCrindle and Wolfinger (2010, p.1) state: "[…] today generations are defined sociologically rather than biologically [cf. traditional biological definition of 'generation']. A generation refers to a cohort of people born within a similar span of time (15 years the upper end) who share a comparable age and life stage and who were shaped by a particular span of time (events, trends and developments)." It means that not only the time of the birth is important, but also the social environment people grow in. As it is expressed in an ancient Arabic saying (cited *ibid*.): "People resemble their times more than they resemble their parents." The social and psychological influence of the Internet is undisputable. However, the views and interpretations may radically differ within the range from those that highlight more the negatives (Diomidous, Chardalias, Magita, Koutonias, Panagiotopoulou, & Mantas, 2016), as cyber bullying, cyber porn, cyber suicide, Internet addiction, social isolation, cyber racism etc. (we found it needful to note that the authors are medical doctors) – to those who find positives in using the Internet; moreover, recommend using social networking sites for educational purposes (Brown, 2003). Our views as educators are in agreement with the latter opinion.
Since the importance of the learner-centered approach is after years of discussions (*cf.* Lim & Richardson, 2016; Cornelius-Whie, 2007; Antón, 1999, and others) in modern pedagogy taken for granted, it is extremely important to know the learners – nowadays Generation Z. Many authors (e.g. Cilliers, 2017) have described the characteristics of Generation Z learners; nevertheless, to support the thesis statement of our paper, Poláková and Klímová's (2019, p.4) conclusions are most valuable: "[…] teachers need to update traditional methods of teaching and make the learning environment more appropriate to modern students." Rothman (n.d.) emphasizes the characteristics of this generation that are used in our research, namely: technologies are a natural part of their lives, they have complex visual imagination and thus their visual learning is highly effective, instead of reading, they prefer watching video, they like interactive games, collaborative learning, and creative tasks.
Although we propose using the characteristics of the new generation of learners for the sake of education, we are at the same time aware of the dangers of overusing the Internet may have on their sociological and psychological conditions. Teachers should show their learners how to gain advantage and profit from their abilities, and, how to avoid the pitfalls of the virtual world at the same time.

2.2 Blended Learning

The learning environment that is the most suitable for the learners who are used to living in the digital world, communicate via e-media, and breathe virtual air is the environment of e-learning, i.e. education using electronic devices. Needless to say, more than pure e-learning, it is the blended learning approach that satisfies the needs of both learners and their teachers.

During the last decades, the term Blended Learning has undergone substantial development. As stated by Ramasubbu (2017, n.p.):

"[…] the concept of "blended learning", which was introduced as early as 2000, has assumed more importance than ever before and has transformed from a theoretical concept with rudimentary applications to an essential part of mainstream education, encompassing a wide array of technological tools, gadgets and concepts. Blended learning, which once referred to use of computer and web-based training in class, has now evolved into a mammoth education program that merges traditional classroom-based instruction with technology enhancements such as electronic whiteboards, Internet devices, multimedia assistance, digital textbooks and online lesson plans."

Bleed (2011) supports the idea of introducing the "hybrid" model, which creatively combines technology and people. He proposes the model in which technology is placed into a traditional course. He aptly names this model 'half "bricks" and half "clicks" ' (p.18), calling blended learning an opportunity to redesign how courses are developed and delivered.

Teachers try to use many ways how to incorporate new technologies into their courses to meet the needs of their Generation Z learners. According to Henrich and Sieber (2009), the number of accessible and demanded electronic tools is still rising. Most facilities for the creation of blended courses are included in Learning Management Systems (LMS) (Henrich & Sieber, 2009). These authors also claim that rich media formats in LMSs reach a high degree of multimediality and interactivity. The authors of this article use the LMS Moodle in their everyday practice and exploit its considerable potentials for blended learning environment.

2.3 LMS Moodle

The LMS Moodle offers the whole menu of activities that could be exploited in creation of courses for Generation Z learners, who are technically knowledgeable, prefer communication via technological tools before direct contact with people; they are visual learners, as their brains have higher visual abilities; they do not want to read long texts and thus prefer Internet to books; moreover, they are kinaesthetic learners, who like interaction with multimedia (Prensky, 2001). As a result, their life (learning included) is for them inconceivable without the Internet (Poláková & Klímová, 2019).

Fortunately, the LMS Moodle has in its repertoire a whole range of tools that respond to the major above-mentioned demands of these learners. The tools can be divided according to the type of activity into: creation (Database, Glossary); organisation (Lesson, Resources – Book, File, Folder, Page, URL, etc.); delivery (Assignments, Workshops); communication (Chats, Forums, News); collaboration (Glossary, Blog, Wikis); and assessment (Quiz, Survey, Feedback).

The LMS Moodle is a system, which is fully adapted to the Web 2.0 conditions. It offers tools such as Blog, Glossary, Quickmail, Feedback, Chat, Forum, Assignment, Wiki and other, which are designed according to the Web 2.0 principles as described above. Moreover, some of the classic tools like Lesson can be converted by the teacher into a discussion forum.

However, it is important to stress that every tool is only as powerful as its user. In this case, it is the teacher, who should be knowledgeable about them and able to organize all the educational process (Costa, Alvelos, & Teixeira, 2012). The teachers of those subject matters that are different from Information and communication technologies (ICT), moreover, being themselves digital immigrants, not digital natives (Henrich & Sieber, 2009), may find it difficult to cope with the demands of latest technologies. However, modern LMS systems are designed to be user-friendly and their users do not need any special courses or skills to be able to fill them up with the desirable content. Then, the most demanding task is to keep the system updated and adapted to the latest developments. The new generation of learners needs a new generation of learning aids, and these can be the tools of Web 2.0.

2.4 Web 2.0

At the beginning, the Internet was simply a portal, where common users passively received information (Faizi, 2018). This phase of development is called Web 1.0, or "readable phase" of the Internet. This author further explains that today, the Internet has developed into the "read-write" venue for participants to collaborate, share information, and interact socially; Internet users now create new content and publish or communicate it to the whole world (Faizi, 2018.). This environment is called Web 2.0. Evidently, it offers many tools that can be used in education.

The Open Education Database (n.d.) lists 101 Web 2.0 teaching tools, classifying them into the following categories: aggregators; bookmark managers; classroom tools; collaboration; course management; e-learning; gamification; office suites; office tools; productivity public content management; and storage.

Undoubtedly, a teacher cannot master and use all of them. The solution to deal with this overload is to use Learning Management Systems, in which these tools are incorporated (see above).

Technical skills and profound knowledge of educational technologies are not the only demands on modern teachers. They should also be familiar with learning theories that create the background of their teaching. These theories explain not only what can be used, but also why and how to use it to create challenging learning environment, tools and materials, from which the learners can benefit. The most important learning theories behind Web 2.0 tools and LMSs are constructivism and connectivism.

2.5 Constructivism

We agree with Bada (2015), who claims that, the implications of constructivism I teaching/learning are immense. The main idea, which should be realized, understood and applied by all teachers in practice, is that "teachers cannot simply transmit knowledge to students, but students need to actively construct knowledge in their own minds. That is, they discover and transform information, check new information against old, and revise rules when they do no longer apply. This constructivist view of learning considers the learner as "an active agent in the process of knowledge acquisition (Bada, 2015, p.66)." Constructivism derives its name from the notion of "mental construction" that is the result of learning.

If we analyse the Web 2.0 tools from the point of view of this theory, it can be clearly concluded that they can be used to support the teachers' efforts to help their learners to "construct" their knowledge. Moreover, the LMS Moodle, which is used in our research, is based on this learning theory. Evans (2011) summarizes how the LMS Moodle can support constructivism in the classroom in five main points (n.p):

1. collaboration,
2. responsibility for learning (Active Role),
3. promotion and assessment of Constructivism,
4. cooperative learning,
5. metacognition.

We can add that there are more constructivist principles behind the LMS Moodle tools. The most important is that it supports constructing knowledge, for example by using the Glossary, where students create their own content, creating Wikis, blogs, etc.

2.6 Connectivism

Connectivism is a theory that was introduced by Siemens (2006), who claimed that in the early days of constructivism, cognitivism and behaviourism education was not as markedly under the influence of technologies as it is nowadays. This influence has enormous consequences, and it is reflected by not only in the content of education, but also the ways and methods teachers teach, and learners learn. While constructivism is based on the presumption that learners actively construct meaning, connectivism considerably emphasizes the process of learning.

Siemens (2006, p. 30) is convinced, that: "The connections that enable us to learn more are more important than our current state of knowing." He develops this idea further, seeing learning as a managed, not fostered process, where "the network of connections is the structure which holds the knowledge of individuals in a holistic manner (p. 33)."

The ideas of connectivism can be applied in any field of education. Veselá (2013) stresses that the very nature of a language enables us to follow the principles of chaos, networks, complexity, and self-organization in foreign language education. However, the most important connectivist idea, which should not be forgotten by teachers is that the ability to learn (create and understand connections) is more important than the current state of knowledge (Siemens, 2006).

In the LMS Moodle used in our research, the connectivist ideas were reflected by teaching the students how to find the order in the seemingly chaotic world of a foreign language, how to find and manage information from the Internet, how to cooperate to find solutions of the Assignments, how to find connections among the nodes of their knowledge in Lectures, Forums, Chats and Blogs, and how to coordinate their efforts to create a meaningful piece of information in the Glossary, or a video published as a solution of an Assignment task.

2.7 Conclusion of the Theoretical Background

To satisfy the needs of the Generation Z learner, the teachers should find the way to exploit the characteristics of those learners, born as "digital natives" to help them learn in the digital environment. The Web 2.0 tools, which are used by these learners naturally, should enable the teachers to update not only the content of education, but also the ways and manners it is created, developed, delivered and shared. LMSs are the platforms, where the use of technologies is enabled and simplified. The educational theories of constructivism and connectivism create a firm theoretical base for the education of the Generation Z learners.

3 Research

Our research is based on the theories introduced above (Generation Z characteristics, Web2.0 tools, blended learning, LMS Moodle, constructivism, connectivism). The research involved a case study conducted at the Department of Language Pedagogy and Intercultural Studies, Faculty of Education, Constantine the Philosopher University in Nitra, Slovakia. The course was led as a blended learning course with a face-to-face part and a computer-assisted part.

For this article, just a part of this research is chosen, since the whole research was too complex to be covered in one paper.

3.1 Aims and Research Questions

The main aim of this part of the research was to find out whether the original course, based on the Web 1.0 philosophy - the first stage of WWW made of static websites connected by hyperlinks, without interactive content (Web 1.0., n.d.) - satisfies the needs of the Generation Z learners; if not, how it could be improved and whether these improvements would be appreciated by the learners. New solutions based on the research results were expected.

Consequently, the research questions were formulated as:

RQ 1: Are the students satisfied with the course, which potentials do they see?
RQ 2: Were the potentials exploited?
RQ 3: Are there any other potentials to be incorporated in future improvements of the course?

3.2 Material and Methods

The first, original course on English lexicology was used before the intervention was made. The course was in its original form available at eldum.phil.muni.cz. Unfortunately, the platform El-dům was closed on 10. 07. 2019, so the version that was used in the research is not available now. That old version was created in the LMS Moodle at the beginnings of its use at the Slovak universities. In those days, it was considered a modern and innovative way of teaching. It offered texts with hyperlinks, links to online dictionaries, moreover, online assignments. It was designed "to read", with the main idea to be available anytime and anywhere, as the theory of e-learning of those days proclaimed. In the year 2008, the course won the Award of the National Centre of Distance Education in the eLearning competition in Hradec Králové, in the Czech Republic. However, almost a whole decade had caused the course, during the time of the research, to be already outdated. The learners of the new generation entering tertiary education demanded a learning environment that would meet their needs. Thus, the intervention was made (see the subchapter Intervention below) and the Web 2.0 tools provided by the LMS were utilized (Lexikológia a frazeológia anglického jazyka, n.d.).

Design-based research served as the main method, since it suits best the philosophy of this research. In design-based research the progress can be tracked and used for new solutions, as it is characterized by an iterative cycle of design, enactment, analysis, and redesign (The Design-Based Research Collective, 2003), conducted in real-word contexts with social interaction (Wang & Hannafin, 2005). It is highly recommended in technology-enhanced learning environments (Amiel & Reeves, 2008) where the design and research can be integrated; moreover, the refined design can be instantly applied. In case of the LMS Moodle, the system in which all statistical data are stored, and the progress tracked, the research can be conducted with the help of these tools. The part of research, in which the data from the LMS are used, is not included in this paper and the results are yet to be published.

The design-based research should take place under real-life conditions; in case of our research, it was the course of English Lexicology, which was an obligatory subject for the second-year bachelor students of English language, the teacher-trainees. The researcher created a case study, limited by the available sample of the students enrolled in the course. The form of case study best reflects the philosophy of design-based research, as it provides an example of real learners in real situations (Cohen, Manion, & Morrison, 2011); furthermore, it shows effects in real, dynamic contexts. In the research, 28 students participated as the research subjects.

To answer the RQ 1, the questionnaire survey was distributed (Appendix A); subsequently, the answers were qualitatively analysed, using a coding system.

After the analysis of the answers, an analysis of the course followed. The researcher compared the results with the theory about the Generation Z learners and Web 2.0 tools (see above), to be able to make interventions that would improve the course with the aim to reach higher satisfaction and better outcomes.

After the intervention, RQ 2 and RQ 3 were asked. The answers obtained by the focus group research tool were analysed and interpreted (see the subchapter Answer to RQ 2 below). The same research objects participated in both forms of research – before and after the intervention. The whole process took place within one semester during a course on English Lexicology.

3.3 Results

Answer to RQ 1
For the purposes of the analyses of the data obtained from questionnaires, four categories were created:

1. Overall opinions of the students towards the course
2. Students' personal evaluation of the course (kinds of activities and material that should be added to contemporary version)
3. Disadvantages of the course
4. Advantages of the course

Qualitative approach to the research influenced the procedure of creating, distributing, and analysing the questionnaire. As the aim of it was to find out the opinions not influenced by the questions, the questions were formulated very generally, and

subsequently the category labels (i.e. codes), have been created from the collected data.

For the purposes of this paper, just the Categories 1 and 2 (Students' personal evaluation of the course) are analysed here.

Table 1 Category 1

Category 1 Overall opinions of the students towards the use of e-learning course		
Number of students who answered Question 1: 28 (*"Did you like the possibility to work with the English Lexicology e-learning course last semester? Why?/Why not?"*)		
Code	Example	Stud.
mostly positive opinion, but aware of possible obstacles	*"I did like it, but people remember more when they write the information down themselves. We copied and pasted the exercises through the semester"*	1
negative opinion	*"I didn't like to use it, 'cause I was too lazy to use it"*	1
positive opinion	*"It was a new method, which I consider quite interesting and unusual than the other classes"* *"It was something different"*	26

According to these results, the answer on the RQ 1 can be formulated: the students were satisfied with the course (26 answers expressing positive opinion). There was just one negative opinion; moreover, the student evaluated more his/her own attitude than the course. Other isolated opinion expressed the idea that "copying and pasting" assignments (exercises in the student's view) was possible. It is necessary to admit that possibility of cheating (copying other students' answers) was high. However, cheating in the virtual environments is an issue that is out of the scope of this study.

Table 2 Category 2

Students' personal evaluation of the English Lexicology e-learning course (Kinds of activities and material that should be added to the contemporary version)		
Number of students who answered Question 3: 28 (*"What kinds of activities or study materials do you think should be added to the contemporary version of the online course?"*)		
Code	Example	Stud.
quizzes	*"maybe quizzes, because it is easiest and funniest to learn"* *"quizzes would be great, I memorize newly learned things better"*	8
discussion forums	*"I would like to discuss about the resources, so some kind of forums or something like that."*	12
chats	*"some chats to exchange information with classmates, well I could use Facebook, but here I would chat about lexicology and not about other personal stuff"*	4
video resources	*"more activities with the use of videos"*	10
glossaries	*"I think glossaries within each lesson would be great."*	7

When asked to propose improvements, students' proposals fully reflected their characteristics as Generation Z learners - they suggested quizzes - which are interactive, discussion forums and chats - which support communication, video resources - which would satisfy them as visual and kinaesthetic learners, and glossaries – which they can collaboratively create.

Intervention

Based on this part of research supplemented be theoretical studies, the interventions were made. The original course included only activities for assessment, delivery and organization. After the intervention, the course provided modules within each of the six types of activities for foreign language education available in the LMS Moodle, i.e. Creation, Organisation, Delivery, Collaboration, Communication, and Assessment. These activities fulfilled the requirements of the students expressed in the questionnaires distributed to answer the RQ 1.

The original course was designed for individual work; it did not contain any collaborative tasks, neither any communication activities. Even though it was delivered as a part of a blended course, and the feature of collaboration and communication was added during the delivery in the F2F part, the research showed that the learners really missed collaborative tasks and communication in the Moodle course. Thus, the intervention included:

1. glossary created by the learners, in which entries were created by groups of students and possibly complemented by multimedia content;
2. blog created in the form of videos uploaded by groups of students as their assignment; and Forum.

Answer to RQ 2

With the aim to answer the RQ 2, the researcher organized five focus group meetings. Four meetings during the use of the initial version of the course, the fifth after the intervention. The number of meetings differ, since the analysis of the course before the intervention needed a more detailed approach to incorporate improvements; what is more, the availability of the sample played role. However, since the data were analysed qualitatively, not quantitatively this fact did not influence the results.

All the focus groups were video recorded, transcribed and coded. In this paper, just the relevant codes for Category 3 – Communication, with Code 1 (Collaborative learning enhancement), Code 2 (Sufficient interaction), Code 5 (Online communication), and Code 6 (Other form of communication) are used. The results of the focus groups are included in Table 3 below.

Table 3 Focus group analysis: Category 3 - Communication

Codes	FG	Examples
1. Collaborative learning enhancement	FG1	S2: *"I like working in groups more than individual work. For example, last assignment; well, I know we are supposed to do them individually, but I did one half; Monika did the second half; then we checked our halves together and corrected mistakes. This is kind of working I like and through which I learn."* S3: *"I agree with him. I know we should do the assignments individually, but I think that group work is the best for learning. When somebody explains to you the issues, you remember more, so it is better when we cooperate."*
	FG2	S1: *"…and it was fun to work on those videos."* S6: *"Well, it is always a problem to meet and work on some group project (pause) but when we were doing those English in new space assignment, the internet communication was enough. We did it through an application on the internet and we were chatting and discussing it."*

2. Sufficient Teacher-Student communication	FG1	S1: *"…I like it that during seminars we can discuss various issues"* *S3: For me, communication with you is sufficient because I may ask during the seminar anything I want and I always get an answer and on the other hand, the system provides us with everything – lecture, materials, so if I need anything I am able to find proper information myself."* S4: *"Well, interaction with you is the reason that I work on my assignments at school. I may ask anything."*
5. Online communication (Facebook, email, etc.)	FG1	S1: *"Facebook is more comfortable than sending messages through Moodle."* S2: *"It [Facebook] is quicker."* S4: *"…everyone has an application in smartphone."* S5: *"We have group e-mail, so when we need anything, we are discussing things there, or Facebook."* S3: *"…we have that Facebook group where we share everything."* M: *"Have you ever tried to message someone via Moodle?"* S3: *"No, and I think that it is not necessary to use many communication channels; as I have already mentioned, we have Facebook group. Everybody has an application in smartphone, and this is enough."*
6. Other form of communication	FG1	M: *"So how do you communicate about assignments when you are at home?"* S1: *"We call each other."* S2: *"Yes, we call..."* S3: *"Well, sometimes I call someone when I am at home and need help."*
	FG2	M: *"Why don't you use forums in the course?"* S5: *"...because seminars and lectures are enough for us."* S14: *"...and if we really, like need to discuss issues, we use Facebook chat or discussion in Facebook group."* M: *"So, this is the main reason why you don't use forums, because you use Facebook anytime? Am I right?"* S3: *"Well, if I may summarize it, why should we use more communication channels?…we discuss issues here [seminar, lecture], and on Facebook…it seems logical we don't need to use forums in the course."* S5: *"We also use our department's [Facebook] group"*

The analysis of the results from the focus group records shows that in the original version of the course students missed assignments or other activities that would support collaborations. After the interventions were made, students had generally positive views regarding collaboration supported by online communication.

As for communication between students and the teacher during the duration of the case study, students expressed that communication with the teachers during the lectures and seminars was satisfactory and they did not need to communicate with them online. On the other hand, they communicated online with each other often, mostly via Facebook. Hence, an effective use of current social networks for study purposes was demonstrated via blending face-to-face communication with the teacher during the seminars and online communication with classmates at any place and time.

It can be concluded from the results that the potentials of using the Web 2.0 tools was exploited and appreciated by the students, they welcomed visualisation (videos) and collaborative activities. However, in the field of communication, the potential was not satisfactorily used. One of the reasons is that the course was blended, and thus students used the opportunity to communicate during the face-to-face part. Moreover, the students were used to social networking sites (especially Facebook) and preferred using it for their communication also about the issues from the course.

Answer to RQ 3

The third question is necessary for the design-based research. It is not enough to be satisfied with the results. Teachers should try to use what their research has discovered to develop better learning environments for their learners.

The focus group revealed that students appreciated Quizzes and asked for more of them.

Table 4 Code 11 – Possible improvements.

11 Possible improvements	Forum; Using Moodle in other course; Group activities; Self-assessment quiz	
	FG2	S5: *"I would appreciate if you added more quizzes."*

In Focus group 2 (FG2), which was held after the intervention, the demand for more quizzes was expressed. This shows the need for interactivity, which can be satisfied in further improvement of the course.

Next potential can be seen in the answers in Table 2, Code 5 (Online Communication) above. The students did not use the communication channels provided by the LMS Moodle, since they used Facebook. They do not like to have too many different communication channels, which becomes clear in case of smartphones with screens that are too small for more applications to be open on one screen. Nevertheless, this pitfall of the LMS can be solved by opening a Facebook group, which will serve just the course and connect it with its content and schedule.

The analysis shows that the teacher underestimated this outcome from the Focus group. It appeared in FG1, which was held before the intervention; however, no action was taken.

Next, the students in the focus groups expressed their satisfaction with sharing the content (Category 1 – Overall use), which is the potential established during the second phase of Focus group meetings. Indeed, the exploitation of this benefit was perceived as very motivational for the students as they were likely to see other classmates' work and learn or be inspired by it.

Table 5 Code 4 - Sharing the content.

4 Sharing the content	FG2	S1: *"I think it is great that we can see our classmates' work now [videos in blog]."* M: *"Did you watch the videos of your classmates at home?"* S1: *"Yes, we wanted to get some inspiration."* S6: *"It was really great that we could see those videos and laugh."*

Video assignment was highly appreciated. It satisfied three demands of Generation Z learners: visualisation, communication, and sharing.

The RQ3 can be answered positively. There are further potentials, which can be used in future improvement of the course. The Focus group research tool revealed some of them, as

adding more interactive quizzes, video assignments (or any other collaborative tasks), and using social networks for communication. When teachers combine these findings with their own analysis of the course and studies of relevant resources, they come to even better solutions. That is how the design-based research works.

4 Discussion

Since 1996, which was the year when Warschauer (1996) wrote his study on merits of CALL, technologies have radically changed. Since then, the Web 1.0 (discussed above) developed to Web 2.0 and learners' generation changed as well.

However, it can be claimed that technologies have not lost any of the potentials described by the above-mentioned authors; moreover, many new potentials have occurred since then reflecting the change of the WWW nature.

In line with Riasati, Allahyar and Tan (2012) who analysed a number of studies concerned with the issue of technology in language education, it was proven that our blended model supported collaborative learning, which is a benefit highly appreciated by the new generation of learners. Recently, many scholars have studied the effects of new tools brought to education by Web 2.0 (e.g. Karvounidis, Chimos, Bersimis, & Douligeris, 2014 and 2018; Barhoumi, 2017); using Moodle and online tools (e.g. Costa, Alvelos, & Teixeira, 2012; Evans, 2011; Karvounidis et al., 2018; Al-Kindi & Al-Suqri, 2017); Generation Z learners [e.g. McCrindle & Wolfinger, 2010; Cilliers, 2017; Poláková & Klímová, 2019; Rothman, n.d.); blended learning [e.g. Ramasubbu, 2017; Henrich & Sieber, 2009); constructivism [e.g. Bada, 2015; Evans, 2011); and connectivism [e.g. Siemens, 2006; Veselá, 2013). This study is an attempt to use all these practices and theories, find their intersection and offer an example how to make the environment to fit the learners.

Even though the results of our research are limited by its scope, and thus cannot be generalized, they are of importance in the field of pedagogy, since they may serve as a base for further research.

5 Conclusion

The results of the research reveal that despite the fact that the course in the LMS Moodle used for the e-learning part of subject delivered in the blended learning mode was relatively new and modern; the seven years from its start were a rather long time, making it outdated. Meanwhile, the new generation of learners entered the educational process. They are the Generation Z learners. The old Web 1.0 is not enough for them.

The case study, which was conducted on a relatively small group of learners can still teach a lesson. It may be dangerous to generalize the results, as they may be different for another group of learners, another subject, another country, another LMS, even another teacher. Moreover, it is surely impossible to replicate the research. The conditions will never be the same.
However, there are some general conclusions, which can be drawn:

1. Teachers should always study to be able to upgrade and update their knowledge.
2. Teachers should do their best to accommodate the needs of their students.
3. Educational environment is always on the move.

Many questions are still not answered and need more research. Our article deals just with positive aspects of using the Internet in education. We do not deal with the dangers here; nevertheless, we admit that they exist. The next step would be to find out the ways to deal with them.

To fulfil the philosophy of the design-based research, we should continue our effort and keep updating and upgrading the content. Furthermore, we need to study the characteristics of every new generation. Web 2.0 seems to come to its dawn and Web 3.0 rises. We know that it will use the synergy of new technology trends and will be even more connected, more open, more intelligent (Bozkurt & Ataizi, 2015). "In terms of language learning, Web 3.0 will track, record, evaluate our activities in an interactive manner that will allow advance learning analytics. […] [which] might be very effective […] (*ibid*., p. 164)." Will we be able to use these tools? The problem for teachers and learners is that they are very often different generations. Can a digital immigrant (teacher) assimilate to a digital native (learner)? We are convinced that they should, or at least try, as the immigrants from less developed countries struggle to accommodate in higher developed environments.

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Primary Paper Section: A

Secondary Paper Section: AM

Appendix A
Pre-research questionnaire

Dear student,

I am a PhD. student at Constantine the Philosopher University in Nitra, Department of Language Pedagogy and Intercultural Studies. I would like to ask you to fill in this questionnaire. The purpose of the questionnaire is to elicit students' perceptions on English Lexicology e-learning course you worked with in winter semester.

The questionnaire is anonymous, and it will be used for the research purposes only.

1. Did you like the possibility to work with the English Lexicology e-learning course last semester? Why?/Why not?

……

2. Do you think the use of e-learning course helped you in your learning of English Lexicology? (If so, how? / If not, why not)

……

3. What kinds of activities or study materials do you think should be added to the contemporary version of the online course (e.g. discussion forums, chats, videos, glossaries, quizzes, etc.)? Why?

……

4. What are the major disadvantages that you see in the use of e-learning course within the English Lexicology course? Name at least 3 disadvantages (1st is the most important disadvantage.)

1……
2……
3……

5. What are the major advantages that you see in the use of e-learning course within the English Lexicology course? Name at least 3 advantages (1st is the best one.)

1……
2……
3……

Thank you very much for your answers ☺