CROWDSOURCING AS AN EFFECTIVE TECHNOLOGY FOR TEACHING FOREIGN LANGUAGES AT RUSSIAN UNIVERSITIES

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Abstract

The purpose of this paper is to analyze whether crowdsourcing may support different learning needs of Russian students, change universities` learning spaces for effective foreign language teaching, enable learners and teachers to create open communities, massive open online courses (MOOCs) and virtual worlds to share ideas, links or materials that would otherwise remain undiscovered.

Modern students, known as Generation Z, have been exposed to digital technologies from their birth. This generation has clearly divided its activities including communication and education into offline and online modes. Even though they dive into the web-based environment with ease, most of them still realize the need for teachers to instruct them. Personalized education seems to be a timely response for teaching such individual students according to their abilities, interests, motivations, and learning styles. Crowdsourcing may serve as an efficient tool to deliver quality education via creating university communities or social networking platforms to share information of common interest, etc.

Our study of crowdsourcing in educational context has been supported by deep analysis and synthesis of scientific literature, case studies and personal empirical research. We examined the broad international experience concerning crowdsourcing through comparative research and study as a source of innovation to improve the system of university education in Russia.

The provided analysis and study allowed us to systematize the theory and practice of the process of crowdsourcing for teaching foreign languages at universities. We revealed the common nature of any crowdsourcing initiative in education including its elements and characteristics, found appropriate Web-based open authoring tools to proceed in our experiments to create, design and test the effectiveness of author's MOOCs and virtual networking platforms.

The outcomes of our research may contribute to better delivery methods in personalized foreign language learning spaces where students may feel more relaxed and independent, truly engaged and motivated. Our general recommendations could be of interest for those building open online communities, MOOCs and virtual networking platforms. Crowdsourcing techniques may integrate learners and teachers, universities and communities, set ideas of "collective intelligence" for future.

Keywords: crowdsourcing, university, students, technology, foreign languages, networking, virtual, personalized, learning spaces, collaboration, collective intelligence.

1 INTRODUCTION

The information revolution that started in the last decades of the 20th century on a global scale has led to transition of human civilization from its industrial phase to the technologically enhanced stage of development [1]. The new reality facilitated the rapid growth and expansion of the so-called information society where various significant activities of individuals or groups of people would increasingly depend on their awareness and ability to effectively access, retrieve, utilize and exchange all available information via technologically mediated means of communication [2]. Daniel Bell, an American sociologist and professor at Harvard University, who is generally considered as the creator of the term "information society", emphasized the importance of both information and knowledge for such a community as key inputs into its economic, political and social processes. Back in 1979, Bell wrote in one of his books: "By information I mean data processing in the broadest sense; the storage, retrieval, and processing of data becomes the essential resource for all economic and social exchanges (...) By knowledge, I mean an organized set of statements of facts or ideas, presenting a reasoned judgment or an experimental result, which is transmitted to others through some communication medium in some systematic form." [3].

Though it is difficult to find a universally accepted definition of what can exactly be termed as "information society", most of the authors tend to characterize it as one in which there is a general

appreciation of the importance of technologically mediated information and knowledge serving as defining features of the modern world [1; 2; 3; 4]. The crucial point is that knowledge and information become the strategic and transforming resources of the information society [3]. Moreover, the society itself provides strong support for knowledge discovery strategies, knowledge retention, and knowledge networking [5].

The invention of computers, growth in telecommunications and availability of the broadband Internet enhanced the concept and enriched it by such new and closely related notions as "digital society", "network society", etc. [1]. But no matter how we call it, the information society is seen as a reality today where all advances and developments are generating new demands for information and knowledge, which in their turn are gradually affecting and changing all aspects of social life and organization, including the economy, governments, education and science, medical care and home security, business opportunities and employment, etc. The main drivers of the information or network society are digital information and communication technologies (ICT) which have become a regular and habitual fixture in many homes around the world, and their influence have permeated into all facets of our lives, including educational settings. The "residents" of the ICT-mediated society are sometimes called digital citizens. These are inter alia university teachers and their students, the latter being referred to as often as Generation Z (aka Gen Z, iGen or Centennials) [6].

According to the research provided by generational experts from the Center for Generational Kinetics based in Austin (Texas, USA), most of the current students are members of the so-called iGen, Centennials or Gen Z community [7]. One key aspect of this generation is the widespread usage of the Internet from a very young age. Members of Generation Z are typically thought of as being comfortable with various digital technologies, and interacting with friends, peers and family on social media websites for a significant portion of their socializing. Moreover, Gen Z is the first generation to be raised in the era of smartphones and tablets that have strongly influenced them in terms of communication and education. As Gen Z gets more digital freedom, they appear to prefer more peer-to-peer social media and really fast messaging apps, such as Snapchat, Vine, Instagram, etc. [7]. The reason here is that they tend to access, retrieve, share, exchange and store different types of information regularly but in a quite fast, affordable, more accessible and easier way. As a matter of fact, iGen`s "digital" lifestyle and experience could hardly fail to influence their learning styles too.

Here comes a contradiction between an individual and group approaches in education. On the one hand, Gen Z students prefer intrapersonal, autonomous, and independent learning styles to group work. Being adepts of web-based research and activities, they often feel they could easily self-educate with online sources such as YouTube or Pinterest [8]. Indeed, the storage, retrieval, manipulation, transmission or receipt of digital data could be conducted individually. On the other hand, it is not the case with data sharing and exchange. Any interaction, be it virtual or face-to-face, calls for communicative behavior which could only be realized in a group or team. Besides, when studying these students like to do their solo work alongside others in a social manner. They also like their learning to be practical and hands-on and want their professors and peers to help them engage with and apply the content rather than simply share what they could otherwise find on their own online [8].

Thus, university teachers face numerous challenges today while developing curriculum and instruction programs for Gen Z students. They should take into account all benefits and drawbacks of a digitizing world as well as the most defining characteristics of the Gen Z generation. Most of the commentators admit that Gen Z representatives are increasingly self-aware, self-reliant, pragmatic, innovative, and goal-oriented [7]. Teachers should find a compromise to eliminate the existing contradiction between an individual and group approaches; and bridge the divide between the prevailing conventional teaching methods and techniques and "digital" expectations and needs of Gen Z students. Most importantly, teachers should also seek such methods of training that may help their students to work together thus adjusting them to a team work, which is more the norm in any work environment, be it digital or not.

Collaborative and cooperative teaching and learning methods along with a new trend known as crowdsourcing seem to be the key answers to the above mentioned educational dilemma. Collaborative method is one where students team together to explore some significant scientific issue or create a meaningful group project over the Internet [9]. Cooperative learning is an instructional strategy that simultaneously addresses academic and social skills of students; students work together in small groups on a structured activity in various modes (student-student, student-students, student-teacher, etc.) and in a variety of environments (face-to-face, synchronous or asynchronous, computer or Web-mediated) [10]. Crowdsourcing is rather a process than simply a method that involves obtaining information about best practices from a variety of people to improve the way education is

distributed [11].

The purpose of this paper is to analyze the latest trends in foreign language teaching and learning in ICT-mediated university environments in Russia; to examine different teaching approaches, methods and techniques applicable to the "digital" needs of Gen Z students; to discover what successful effects may team work and crowdsourcing in particular bring to university education; to find out a more particular definition of the term "crowdsourcing in education" and survey how may team work and crowdsourcing enable learners and teachers to create open communities and platforms, massive open online courses (MOOCs) and virtual worlds to share ideas, links or materials that would otherwise remain undiscovered. We will not focus on a technical description of software or networks, but rather on the pedagogical questions that teachers might consider while using ICT-mediated methods and techniques with the aim of improving the way education is distributed and received at university.

2   METHODOLOGY

The methodological framework of this research work rests on the comparative approach that allows discovering and accumulating best practices and experiences of employment of team work methods and techniques and crowdsourcing in particular while teaching and learning foreign languages at universities for their further dissemination worldwide. A comprehensive analysis of the technical, pedagogical and managerial issues of crowdsourcing as an effective technology for foreign language teaching of university students has also been provided as an integral part of the research. We examined the broad international experience concerning crowdsourcing through comparative research and study as a source of innovation to improve the system of university education in Russia.

Our study of the latest trends in foreign language teaching and learning in ICT-mediated university environments in Russia and the process of crowdsourcing in educational context in particular has been supported by deep analysis and synthesis of the best scientific findings on the topic presented by prominent western scholars [10;12;13;14]. We also examined and analyzed some unique characteristics of crowdsourcing in education [15], the major steps needed to develop a crowdsourcing community and relevant platforms, massive open online courses (MOOCs) and virtual worlds to gather ideas and then publish and disseminate them for public opinion.

Based on the empirical approach testing, evaluation and control of usability, accessibility, availability and safety of some major ICT-based methods, techniques, tools and resources have been performed. An experimental study has also been conducted in order to obtain and compare certain relevant data concerning the learning outcomes of students in a traditional versus ICT-mediated learning environment [14]. The process involved 30 teachers and more than 360 students who were temporarily placed into separate learning environments, i.e. conventional (traditional) and ICT-based.

We took into account the latest US national research statistics and findings on Generation Z published recently by the Center for Generational Kinetics based in Austin (Texas, USA) [7] First, we analyzed the general and most defining characteristics of the Gen Z students; and then their preferred learning styles and modes. In the end we examined with due diligence the applicable teaching and learning methods and techniques, which will simultaneously address academic and social skills of Gen Z students as well as support their "digital" learning expectations and needs.

To sum up the topic we identified and enumerated most of advantages and disadvantages of crowdsourcing within an ICT-mediated university environment from the point of view of both teachers and students. The provided analysis and study allowed us to systematize the theory and practice of the process of crowdsourcing for teaching foreign languages at universities. We revealed the common nature of any crowdsourcing initiative in education including its elements and characteristics, found appropriate ICT-based open authoring tools to proceed in our experiments to create, design and test the effectiveness of author's MOOCs and virtual networking platforms.

3   RESULTS

The main result of the study is the design of the model of an efficient ICT-mediated student-centered learning environment that enhances the quality of university education in general and fosters foreign language acquisition in particular. It should be a multilingual educational space of university based on inclusion of the native language and teaching of one or more foreign languages to students (usually English, German, French, Spanish, etc.). Such a space functions in the interconnection and complementarily of all its components that are traditionally integrated into educational process of

university. The learning environment should also be organized in accordance with the changing learning needs and styles of modern students, usually referred to as the "digital generation Z", their preferences and capabilities [16]. The learning environment of university should thus be organized with a due ICT-based support where educational tools and resources might function as adaptive, familiar and comfortable instrumental facilitators of the learning process [17].

The ICT-mediated environment of university, supported by direct quick access to computers and the broadband Internet, should include the well-structured university's website, educational portal for electronic and distance learning offering inter alia access to massive open online courses (MOOCs), information-sharing crowdsourcing communities and virtual networking platforms, digital libraries, etc. Classrooms and lecture rooms should be equipped with all sorts of digital devices and multimedia equipment, adapted for work with both external and internal ICT-based and other free easily accessible educational resources [17]. Moreover, universities shall not fear to integrate their institutions with the communities in which they exist and operate. Culture of sharing ideas for enhancements in educational context is receiving the increasing support today. The reason is obvious: crowdsourcing initiatives give universities better chances to hear from students, faculties and communities about their current advances and drawbacks. Crowdsourcing ideas help universities remain competitive, build their reputation, and draw additional students. As a matter of fact, being receptive to ideas and change makes universities much more attractive to prospective students [11].

The data driven analysis proved that most of the students showed better learning outcomes in the ICT-mediated environment strengthened by various crowdsourcing initiatives. Students can benefit greatly from crowdsourcing in different ways. For example, on one level, they can help each other with home assignment and answers to sample problem. They can create and share summaries, tables, charts, books, and other materials. On another level, crowdsourcing gives students a chance to participate in a group process where they may be exposed to real-life problems necessitating critical thinking, ability to evaluate and propose creative solutions [14].

4 DISCUSSIONS

ICT – is an acronym that stands for "information and communications technology". The phrase ICT had been used by academic researchers since the 1980s, but it became popular after it was used in a report to the UK government by Dennis Stevenson in 1997 and in the revised National Curriculum for England, Wales and Northern Ireland in 2000 [18]. Generally speaking, ICT is an umbrella term that includes any communication devices or applications that will store, retrieve, manipulate, transmit or receive information electronically in a digital form. So, ICT is concerned with the storage, retrieval, manipulation, transmission or receipt of digital data. Importantly, it is also concerned with the way these different tools can work with each other and serve the needs of the users. In its broader sense, ICTs may be defined as a diverse set of technological tools and resources used to communicate, create, disseminate, store and manage information [14].

In the past few decades, information and communication technologies have provided the world population with a vast array of new communication capabilities. For example, now people can communicate with others in different countries in real-time or synchronously using technologies such as instant messaging, voice over IP (VoIP), and video-conferencing. People can also communicate globally via electronically mediated communication that is often asynchronous meaning that the participants do not communicate concurrently. Examples include email and bulletin board systems, etc. – where participants send or post messages at different times. Social networking websites – like Facebook, Twitter, Skype, etc. – allow users from all over the world to remain in contact and communicate on a regular basis. Modern information and communication technologies have even created a "global village," in which people can communicate with others across the world as if they were living next door [5].

ICTs are the powerful tools for educational change and reform, since they enable access to information exponentially and provide knowledge and social skills acquisition continuously throughout the lifetime. Thanks to the World Wide Web, access to authentic materials has never been easier; vast linguistic resources and an exhaustive range of materials are available now in all languages and in just one click and, beyond, ready for immediate exploitation. Thus, integration of ICT could only dramatically change and improve the efficiency and effectiveness of education at all levels and in both formal and non-formal settings [19]. The introduction of the new "teaching with technology" approach has been hailed by many supporters with enthusiasm as the wave of the future in which language instruction will be driven by new advances in computers, the Internet, mobile technologies, etc. [18].

The analysis of the literature [20; 21] on the topic allowed us to assume that most of the common trends of the 21st century associated with foreign language teaching and learning are all ICT-based. Take e-Learning, web-based and mobile learning and other forms of online education – these methods are considered by major universities as clue solutions for continued educational success in a digital era [16]. The other trend is concerned with employment of real world applications – which allow students to apply theories to realty and see them in action [22]. Gamification – is also ICT-based with nearly half of the teachers admitting that they have at times incorporated online games into their classroom educational setting [19]. Emerging and use of Open Source Textbooks, Massive Open Online Courses (MOOC), information-sharing crowdsourcing platforms are all based on networking, cooperation and collaboration over the Internet [23]. Blended learning – regarded as the foremost trend in education – combines online digital media with traditional classroom methods [24], etc. The other ICT-based trends emerging across the global higher education sector and deserving our attention include: mobility, connectivity, openness, virtual world platforms, and collective intelligence or crowdsourcing [5].

Mobility in this context – relates to the fact that as we move forward, higher education becomes increasingly mobile, resulting in students carrying their university "in their pockets" [21]. Mobile computing devices – such as smart phones and tablets – become quite affordable, more accessible and easier to use than desktop computers, and provide more than enough functionality to serve as a primary computing device for learning. Many new and innovative education apps are available for a wide variety of uses, such as on-line translators and encyclopedias, or those providing access to archived content in university libraries or course materials [25].

Connectivity – is another trend. Whether connecting at home, work, university, on the road or in social spaces, people increasingly rely on "cloud computing" to access their information and communities. Cloud computing quietly unifies content and activity on many devices people use in everyday life. Gradually, many educational applications will also rely on the cloud soon. Learning design will increasingly take account of the potential for "learning locations"; and in this sense, the world will become the global university campus. Increasingly we will see location-based services utilized as a key learning tool in higher education. We will see the management student in a case-study location, the lawyer in the courtroom, the social worker in the community, the nurse in the hospital, the archaeologist in the field, still connected with university resources and a community of peer learners.

Openness – will bring an explosion of free, online educational resources and courseware. Educators are beginning to explore new models that focus on embedding open resources while still protecting the academic value and acknowledging authorship. Content provided under "some rights reserved" license – will allow anyone to use the material however they like, providing they follow the guidelines created by the content creator or provider. Another step to the openness in education is achieved through using social media to provide a rich, engaging dialogue between students, teachers and the staff. Many universities are starting to realize how they can add real value to learning and teaching via increasingly open collaboration, cooperation and contribution techniques, which will become a valid, vetted and important part of the process soon [18].

Virtual worlds – are virtual world platforms that provide avatars with a space to interact. Some are already available, including the well-known Second Life (http://secondlife.com/) with thousands of educational experiments available and with more under development. The majority of higher education institutions are undertaking various projects in virtual spaces. The unique opportunities afforded by virtual worlds and other immersive digital environments – possibility to do what cannot be done in the real world – enable universities to increasingly use virtual spaces with avatar students and teachers for innovative teaching, learning and research projects [26].

Collective intelligence or "crowdsourcing" – is all about creating communities, usually temporary, to contribute ideas, links or materials that would otherwise remain undiscovered. Crowdsourcing is also defined as the practice of outsourcing tasks to a broad, loosely defined external group of people. The idea is generally to introduce new or more developed skill sets or a larger work force to achieve some specific goal [27].The term was first coined by Jeff Howe back in 2006 in a Wired magazine article titled "The Rise of Crowdsourcing". Jeff Howe wrote then: "Crowdsourcing' refers to a novel approach to distributed problem solving, in which tasks traditionally assigned to the employees of an organization or to a designated group or community of interest are outsourced to a loosely defined 'crowd' of people through an open call" [13]. Howe suggested that crowdsourcing encouraged the best-qualified and most creative participants to join in on a project [12].

Crowdsourcing often fills in the gaps that cannot be bridged by other means. At universities, this is

currently taking the form of experimenting with massive open online courses, or MOOCs. MOOCs offer university-level courses without the need to complete an entire program of studies, and are becoming increasingly popular. MOOCs offer a large number of students the opportunity to study high quality courses online with prestigious universities, often at no cost. Video-based, they offer interaction through either peer review and group collaboration or automated feedback based on objective, online assessments including quizzes and exams. Though they are ideal for independent study and users can select courses from any institution offering them in the absence of entry requirements, MOOCs do not always lead to formal qualifications [28]. This can be considered as a drawback rather than advantage. In the years to come we will see though many more universities utilizing MOOCs and numerous social networking platforms to share information of common interest. Ideas of collective intelligence are a big challenge to validated and accepted knowledge at universities, and traditional ways of teaching. But increasingly academics and educators are seeing the value of exploring crowdsourcing ideas for the future science and education [29].

Possibly the earliest "pre Web and ICT" example of crowdsourcing is the collection of words for the Oxford English Dictionary (OED). In 1858, a group called the Philological Society contracted with over 800 volunteer readers to collect words from all available books and document their usages. Subsequently, the group solicited broader public input and received over six million submissions over the 70 years of the project. In 1936, Toyota held a contest seeking a new logo design. The winning design from over 26,000 entries remained the company's corporate logo until 1989 [30].

The more recent examples of crowdsourcing are "pre 2006" Wikipedia and MIT OpenCourseWare. Wikipedia launched as a collaboratively written and edited online encyclopedia in January 2001. Free registration enabled anyone to submit or edit an entry. The multilingual site now hosts several million entries in English alone. MIT OpenCourseWare (MIT OCW) – serves as an example of open crowdsourcing platform by the Massachusetts Institute of Technology. OCW projects (https://ocw.mit.edu/index.htm) basically include some course lessons created at universities and published for free via the Internet. SlideWiki (http://slidewiki.org/) is an authoring platform for OpenCourseWare created as a proof of reliability and validity of a crowdsourcing concept. This authoring tool empowers large communities of instructors, teachers, lecturers, academics to partake in a revolutionary way of creating, using, delivering and sharing educational materials and content. Besides, SlideWiki facilitates collaboration, cooperation and crowdsourcing, as well as translation, communication, evaluation and assessment of materials and content, etc. [31].

The new online open networking platforms such as InnoCentive (https://www.innocentive.com/); Upwork – formerly Elance-oDesk (https://www.upwork.com/); Ushahidi (https://www.ushahidi.com/); Kickstarter (https://www.kickstarter.com/); CrowdFlower (https://www.crowdflower.com/) – have greatly simplified the execution of crowdsourcing projects, bringing together "requesters" (person or institution seeking help from the crowd) and "workers" (individuals or teams taking on tasks advertised via an open call) [26]. Putting aside the principled differences between forms of crowdsourcing (off-line, on-line, hybrid, etc.) and its types (crowdfunding, crowdsolving, crowdsearching crowdsourced design, crowdwisdom, collective intelligence, crowdvoting, macrowork/ microwork, inducement prize contests, etc.), let's single out the most characteristic features common to all successful crowdsourcing endeavors or projects. These include: online environment; outsourcing task (task broadcast) and open call; large masses of participants (the "crowd" consisting of both "requesters" and "workers"); problem solving, collaboration and co-creation; competence and expertise diversity; motivation, stipulated fee or any other incentives provision; result submission, result verification and quality threshold [26].

Working together, obtaining information about best practices from a variety of people and sources, sharing ideas is especially important in education. A typical university has several communities: students, faculty, staff, alumni and retirees. The first three are active participants in the daily functioning of the university. They can provide valuable insight into inefficiencies in services, teaching / learning methods, techniques and programs provided. Alumni and retirees on the contrary may be regarded as passive participants who support the institution for emotional reasons. Typically, their support is either financial or advisory but they can provide an outsider's perspective to university, especially with respect to its perceived image [15].

In crowdsourcing, there are three steps to managing and implementing ideas. The first step – is to gather ideas and then publish them for public opinion. Opinions must be visible to encourage healthy and relevant dialogue. The second step – is processing the submitted ideas and the associated public comments. Processing involves deciding which ideas are popular enough to implement or are possible to implement. Transparency is necessary for crowdsourcing to work. Implementation requires the dedication of a university's resources. An idea or a group of ideas chosen for implementation might

conflict with the university's current priorities. The implementation process establishes the priority and the scope of the implementation, and allocates budget and other resources. As with the process step, it is very important to communicate the progress of the implementation to build confidence in the process. This also conveys the university's commitment to better serving its communities [15].

Crowdsourcing – is an important method to improve the way education is conducted by teachers and received by students. Benefits of crowdsourcing for universities, faculty (including teachers, lecturers and professors) and students are obvious. Teachers and professors can share lesson plans with each other and find new and innovative ways to share materials and content with students. They can brainstorm together to create a database of resources and best practices that benefit their institution – and then share that information with other universities as well. They can give feedback and offer assistance in further developing curriculum [27]. Finally, faculty can use peer evaluations to help with grading practices and to receive feedback on their teaching styles.

Universities in Russia started to experiment with crowdsourcing innovations not long ago. They mostly rely on the best overseas practices and apply them actively in the learning process. Suffice to mention, for example, an open virtual IdeaScale community (https://ideascale.com/) developed by Georgetown University, which brought class evaluations online – this step alone gave faculty more efficient and effective access to feedback, allowing them to react to student suggestions more quickly. Another good example worthy of imitation and support is MIT OpenCourseWare project (https://ocw.mit.edu/index.htm) by the Massachusetts Institute of Technology, which started to use Creative Commons Attribution-Noncommercial-Share Alike license back in 2001. The MIT initiative has inspired more than 250 other institutions worldwide to make their course materials available as open educational resources through the Open Education Consortium.

5   CONCLUSION AND RECOMMENDATIONS

As we see the current trends in foreign language teaching and learning are taking on an absolutely new shape as university teachers leverage modern ICT technologies and strategies to creatively deliver content in various ways to their students. As a result, the learning environment is constantly evolving and changing thus creating among other things new etiquette of learning and teaching, shifting the locus of control from the teacher to the learner and, according to International Society for Technology in Education (ISTE), bringing the world to the classroom [21]. No doubt, using information and communications technologies (ICT) to digitize education across Russia will lead to further innovation, social inclusion, job creation and national competitiveness.

University students were always known to learn in many different ways, at different times and at different pace. This statement applies equally to modern times as well as to various subjects and disciplines including foreign languages. Moreover, it is generally recognized that different generations also show differing attitudes to employment of information and communications technologies in foreign language acquisition process, including such ICT-enhanced methods of teaching and learning as e-learning, web-based and computer-assisted learning, distance, mobile and blended learning, etc. This tendency determines the essential nature of changes in attitudes toward new digital learning styles and modes but not against the foundational learning infrastructure of universities, even though the latter is often criticized as being an out-of-date teacher-centered platform unimaginative for the use of new technologies. According to Dr Christopher Jones from the Open University at Walton Hall in Milton Keynes, UK, modern students in different institutional and cultural contexts perceive and use ICT technologies in their social and educational lives almost alike [32].

But if we compare today's generation of young people (Generation Z or Gen Z) who have been immersed in a world infused with networked and digital technologies from their birth with any of the previous generations, we will register the gap or digital divide. Generation Z students (Gen Z) live in a world full of continuous technological updates and advances. First, Gen Z processes (gathers, accepts and retains) information faster than other generations. Secondly, their media consumption habits significantly differ from previous generations – Gen Z uses their smartphones more than any other type of device. Thirdly, they prefer cool products to cool experiences. Ironically, traditional marketing doesn't work for Gen Z; and marketers need to embrace technology and new ways of storytelling. They respond to edgy campaigns only! At the same time, Gen Z members are quite educated, goal-oriented, entrepreneurial and tech-savvy. These are young people who were born from 1995 onwards; they are starting to enter the workforce thus earning money and building their own income. And finally, they want to co-create culture and knowledge and change the world for better – and they do. University teachers should take all these peculiar facts and features into account and try to direct

students' natural online proclivity, creativity, and other advanced characteristics towards their learning needs and targets [9].

Another important finding concerns the general recognition of the shift from individual competencies to group competencies and in both learning institutions and the workplace. Value is placed now on how individuals can work as part of a team and this emphasis on team building should be an integral part of any university learning environment [33]. In order to effectively apply this advantageous paradigm to real-life educational curriculum and settings, collaborative, cooperative and crowdsourcing methods, techniques and resources should be created, developed, implemented and utilized within the communities in order to be further distributed and disseminated globally to their peers and supporters.

The outcomes of our research may contribute to better understanding of the current trends in higher education sector with emphasis on teaching and learning of foreign languages; enhance the existing instruction and knowledge delivery methods in ICT-mediated learning environments at universities so as the students feel more relaxed and independent, truly engaged and motivated. Our general recommendations could be of interest for those who tend to build open online communities, create MOOCs and virtual networking platforms. Crowdsourcing techniques will bridge learners and teachers, universities and communities, and set ideas of "collective intelligence" based on wisdom of a "crowd".

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