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EDUCATING DESIGNERS FROM GENERATION Y – CHALLENGES AND ALTERNATIVES

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ABSTRACT
The paper discusses the learner characteristics and the corresponding teaching strategies that can be applied to the education of Generation Y (Gen Y) – the cohort born between the early 1980s and the early 2000s. Experienced with digital technology from their early childhood and exposed to tremendous amount of information which can be instantly accessed, Gen Y students are highly demanding of their education. This poses the challenge of updating and adapting the teaching to their changing learning needs and expectations.
Based on the findings of a survey on the specific profile of our students concerning their technological background, interests and preferences, we have come to the conclusion that lectures and seminars do not provide the optimal learning environment. We were motivated to propose a series of extra-curricular activities built on the teaching material of the disciplines Form-formation and Theory of composition. The paper reports our teaching experience of several systematically selected educational formats brought together under the name "Student scientific-educational forums". They include research papers, debates, conferences, creative workshops and virtual exhibitions. By introducing these activities we aim to enhance learning in the two disciplines, to engage students actively in the educational process, to enable them to discover by themselves what they need to know and to link the theoretical studies with practical design problems.
In conclusion we evaluate the quality and effectiveness of these new teaching strategies. Furthermore we discuss how students' academic development is affected and how the implementation of the proposed activities results in more successful learning.

Keywords: Generation Y, experiential learning, student-centred education, interactive education

1 INTRODUCTION

Debate and research on the impact of technology on educational process has become increasingly relevant in recent years. Born in an age of technological breakthroughs today's students are accustomed to using computers and cell phones from their early childhood. Technology is considered much more than a tool for the generation "born with a chip" [1]. It is so deeply embedded in their lives that it had a profound effect on their behaviour, attitude and lifestyle. They are ambitious, experiential and active learners, who communicate predominantly through instant messaging and social networking, prefer working in teams and enjoy multitasking. Generation Y [2], Millennials [3], Net Generation [4], Trophy Kids [5], Dot.Com Generation [6], Digital Natives [7] are the most popular names given to the generation that shares these inherent traits. In this paper we will use the term Generation Y (Gen Y) and will discuss the learner characteristics of the cohort and the corresponding teaching strategies that can be applied to design education.
Technology not only shapes the way students communicate and collaborate with each other but also redefines the context of contemporary education. As a result of the established new models of information access and sharing, Gen Y students are not satisfied with the traditional methods of teaching and become more demanding of their lecturers and the technological tools they use in class. They prefer a more student-centred learning style where knowledge is acquired through experience instead of passive receiving of information. Offering various opportunities enabling them to participate actively in the educational process, take the initiative and have choice is also highly appreciated because students feel they have the responsibility for their own learning. In order to respond adequately to the changed needs and expectations of today's students a conceptual transformation of the educational system is required [8]. It should reflect the technological shifts of the

global society and support the information-age learners. When the program is tailored to their specific characteristics, students' motivation is increased and this leads to improvement of their academic achievement and overall enhancement of the effectiveness of the education.

2 IMPLICATIONS FOR STUDENTS' LEARNER CHARACTERISTICS

Studying the defining characteristics of Gen Y that distinguish them from other generations is a key factor in understanding their attitude towards education and hence determining the most appropriate teaching strategies. Gen Y have grown up in a world of rapid technological advances affecting the way they learn, their approach to knowledge acquisition and the forms of interaction between themselves, with lecturers and with the training resources. As a result of their techno-dependency and the fact that they are accustomed to using computers and internet to perform any given task, Gen Y has formed a set of unique characteristics and competences which predetermine their individual learning style. The representatives of the cohort are described as special, sheltered, confident, conventional, team-oriented, achieving and pressured [3], seeking for freedom, loving to customize and scrutinize, looking for integrity and openness, appreciating entertainment, having need for speed, being innovative and collaborative [4]. In accordance with these characteristics Gen Y students choose active and engaged learning experiences within interactive environments as the most appropriate and meaningful learning strategies for them. They learn better by doing and through social interaction [9, 10], prefer to learn in their own time and on their own terms, appreciate structured activities that permit creativity, want to be involved with 'real life' issues, enjoy using technology [11] and believe they are efficient multi-taskers [3, 4, 9, 10].

2.1 Survey on students' computer and internet use

Though extensive research has been made on Gen Y characteristics, needs and values, at the beginning of 2011/1012 and 2012/2013 academic years we conducted our own survey on the specific profile of our students concerning their technological background, specific interests and preferences. We used the open source online survey Lime Survey (www.limesurvey.org) to program our questionnaire through which we wanted to get a more detailed understanding of the way they use computers and internet and how they apply it for educational purposes. All sixty-one surveyed students own a desktop computer and have constant access to internet. 98% reported they have a laptop as well and 69% are connected twenty-four hours through smartphones or tablets. Most of the students began using computers between the ages of 10 and 12 while only five of them started after the age of 15. This means that when they enrolled at the university they have gained experience in computer use and the survey confirms this fact as all respondents think they are adept users who are proficient in various online activities, word processing and at least one CAD software.

More than half of the students (58%) spend between three and six hours a day on the internet and one third (26%) spend an average of over six hours a day. When asked to rank what they use internet for, the survey shows that the most common use is for social networking (placed on first place by 61%). Among the secondly placed are: for doing schoolwork (35%), for reading news (22%) and listening to music (22%). Only 17% said they use internet primarily for exam preparation and other academic research. In addition, to a question regarding multitasking 96% of the students confirmed they perform a number of tasks simultaneously. These results show that our students combine learning with pleasure since they use internet as a source for communication and entertainment but also as an instrument for research and learning. We also asked the question "How do you prepare for exams" and were surprised to find that 82% prepare primarily reading lecture materials. Using search engines to find the relevant information is placed on the second position by 25% and on the third position by 40%, while only 18% indicated they browse the web first of all. Next in order come reading textbooks with 65% of the students ranking it on the second place and reading wikipedia with 5%. We surmise that a possible explanation of these results is that students choose this traditional preparation to make sure they would respond more precisely to lecturers' requirements. At the same time we asked how they receive information about the latest in the sphere of design and 92% responded they read design blogs and unfortunately only 8% think the information they get at the university is topical enough.

Regarding the most popular online activity where students spend the largest amount of their time – social interaction, Facebook turned out to be the most preferred platform with 100% of the students having a profile. Next in popularity rank Pinterest (used by 30%), LinkedIn and Instagram (both used by 22%). The vast majority of students (56%) reported logging in at least three times a day and only

12% log only once or twice a day. It is evident that social networking is very important for Gen Y students and we wanted to understand whether they use this form of communication with their lecturers. Only 18% answered positively to this question and another 78% stated they have contacted lecturers via e-mail. Among the reasons were indicated issues related to the homework assignments given at the seminars (72%), clarifying questions related to the lectures (22%) and issues regarding the schedule (13%). At the end of the survey we asked students to describe in a free text their expectations of education and among the most common answers were: training including the most topical design issues, providing opportunity to control their own learning, effective information and knowledge communication through the use of modern technology, acquiring relevant knowledge that will help them in their future design profession, education including more collaborative work.

2.2 Analysis of the survey results and conclusions

The results of the survey unambiguously confirmed that for Gen Y students technology is more than a tool. It is an inseparable part of their lives, engaging their attention and helping them to understand and experience the world. We found that they are very active in using technology to network and socialize but at the same time do not take full advantage of their technological skills for educational purposes. We wanted to change this by offering a more interactive teaching strategy totally reshaping the existing traditional learning experience. Gathering the most relevant information about our students regarding their technological use and preferences was very important step in the process of curriculum design because in this way we could adapt the proposed activities to their specific requirements and interests. We aimed to focus on the following knowledge and skills: to foster critical thinking skills, to stimulate students to express and communicate their ideas clearly, to develop skills to analyze and criticize, to improve their thesis argumentation and public speaking behaviour, to enhance independent learning, to stimulate creative participation. Our belief is that through providing different opportunities for student initiative and personal expression, we can respond more adequately to the generational characteristics, motivate students, enable them to develop their potential and enhance their overall learning experience.

3 EXTRACURICULLAR ACTIVITIES IN THE TEACHING OF FORM FORMATION AND THEORY OF COMPOSITION

After we processed the results of the survey we set the goal to update the education of the two disciplines we teach – Form formation and Theory of composition. Objectives of the courses and the applied educational methods are explained in detail by Zheleva-Martins [12, 13]. Implementing modern interactive approaches into the curriculum is an important step towards establishing a student-centred learning process fully consistent with Gen Y characteristics. Unlike conventional learning where students are passive recipients of information and rarely participate in the development of the curricula, student-centred learning is flexible, fosters collaboration and supports students' independence in controlling their own learning. Within this approach learning is more meaningful for the students and they become more aware of the skills, knowledge and competences they will acquire during their education. Next are presented examples of the integration of several systematically selected educational formats brought together under the name "Student scientific-educational forums" which were developed to complement lectures and seminar classes. In general they include research papers, debates, conferences, creative workshops and virtual exhibitions. By introducing these activities we intend to enhance learning in the two disciplines, to engage students actively in the educational process, to enable them to discover by themselves what they need to know and to link the theoretical studies with practical design problems.

3.1 Educational-scientific conference

The first initiative of the series was held in the winter semester of 2011/2012. This was an educational-scientific conference on the theme *"Application of Gestalt Principles in Design"*. During this semester students studied Theory of composition and the conference aimed to expand their knowledge on the topic of gestalt principles and their creative interpretation in design compositions. Lectures introduced students to Gestalt psychology's main ideas, principles and laws but the limited time of the classes did not allow deeper theoretical research and further exploration of their practical application in the design sphere. We proposed a number of topics within the main theme of the conference but we were open to suggestions from our students as well. They were given complete freedom to choose the topic, the type

of presentation and the way of approaching the problem. Students responded very eagerly to this first of its kind initiative in our university as almost half of them were willing to participate. The conference proved to be an excellent platform for both self-training and collaborative work. Each participant had the opportunity to immerse thoroughly in the selected topic and by working on his own to construct his knowledge of composition and subsequently to share it with his fellow students and lecturers. Our role as educators was to guide them through the research process in preparation of the papers and posters for the event. To facilitate coordination we created a facebook page of the courses (facebook.com/pages/Formoobrazuvane) where students could express their opinion and ideas, ask questions and share relevant information. This form of communication was very successful and later on we began using the page for all types of announcements and discussions regarding classes.
Summarizing the results of the conference we can conclude that it went brilliantly and generated a number of useful outcomes for the students. Besides the developed analytical, argumentative, interpretative and presentation skills, participating students were given an excellent grade as a bonus and those who had managed successfully with the assignments and current control during the semester were exempted from the exam. Furthermore, they were awarded certificates, giving them the opportunity to compete for European scholarships. The rest of the students who did not prepare papers and posters were not just passive listeners but participated actively in the discussions following each presentation. They showed great interest in the work of their colleagues, asked them many questions and appreciated highly their efforts. At the end many of them expressed the opinion that they have learned a lot of interesting and useful things and that they enjoyed the event. For the benefit of the students of the next classes we decided to publish a CD with the conference materials [14]. The CD was issued in 2012 and opened a series of educational materials titled "Student Scientific-Educational Forums". This form of student co-participation combining the individual efforts of the participants in the conference is a logical conclusion of the event, producing a valuable collective outcome written by students for students.

3.2 Student debate

The debate we organized in the summer semester of 2011/2012 was another initiative aiming to increase students' involvement in the educational process. It was based on the teaching material of the discipline Form formation but the chosen theme *"Form Formation between Chaos and Order"* threw bridges to the latest advances of various fields of the scientific knowledge related to the subject. The main objective was not so much to distinguish a winner defending one or the other thesis but to go deep in the essence of the form formation principles and to see them as a dynamic dialectical opposition. We wanted to mobilize students to participate actively in the acquisition of their own knowledge, to become confident in building strategies for defending a thesis, to develop ability to analyze controversial issues, to construct and refute arguments. The debate was focusing on the development of critical thinking skills through research, reasoning, interpretation and evaluation of the supportive arguments, solving complex problems for a limited time and finally communicating effectively opinions and conclusions to the audience.
This form of experiential education promoted learning through social interaction within each group of students but also enabled the most enterprising among them to take leadership roles and to guide their teams towards taking the right decisions. To distinguish the students who were most persuasive at the end of the debate we organized voting. Those who received the greatest number of votes were awarded certificates and again had the opportunity to be exempted from the exam. Organizing and performing the debate was a great challenge both for the lecturers and the students but the attained outcomes consisting in increasing the critical thinking skills and enhancing collaborative learning were worth the efforts. Students showed eagerness to participate and estimated highly the usefulness of the debates for gaining knowledge of the discipline in a more interesting and engaging way.

3.3 Extracurricular activities in 2012/2013 academic year

Following the success of the events organized in 2011/2012, the next academic years we continued to include analogous extracurricular activities in the teaching. These were respectively: abstract readings on the theme *"Semiotics and Design"* (2012/2013 winter semester), workshop *"Form Formation Inspired by Nature"* (2012/2013 summer semester) and video marathon *"Composition and Style"* (2013/2014 winter semester). Each of these events was created with the objective to relate knowledge acquired in the lecture classes with up-to-date developments in modern sciences, considering the

educational needs of our students. We can summarize that conducting such extracurricular activities has been already established as a tradition fostering students' creativity and heuristic thinking and creating a positive learning environment.

3.4 Virtual exhibition

Another educational concept stimulating students' creative participation was conceived in the form of a virtual exhibition [15]. The *"Hall of Fame"* blog [16] presents in cyberspace the best student works on the assignments of the disciplines Theory of Composition and Form Formation. This unique web-based presentation turned out to be extremely successful way to engage students, providing opportunity for personal expression in full compliance with the blogging culture of Gen Y. The competitive environment which originated challenged them to work hard so that their designs were approved for publication. Students who succeeded in finding a place in the "Hall of Fame" felt very proud and we observed that this raised their self-confidence and inspired them for further creative expression including participation in other design contests.

Figure 1. Examples of posters announcing the events: Student conference, Student debate, Abstract readings, Video marathon

4 CONCLUSION

To meet the challenges imposed by technological development modern education needs rethinking and restructuring. We realize that our students belong to a generation dependent on technology and it is our responsibility to integrate it as an educational tool in order to respond effectively to the changed learning needs and expectations. We are trying to consider the requirements of our students by including in the teaching a series of extracurricular activities supplementing lectures and seminar classes. Our main objective is to substitute traditional linear approach in education by offering alternatives which engage students more actively in the educational process and create learning environment based on interactivity and collaboration. The events we have organized in the last two academic years (conference, debates, abstract readings, workshop and virtual exhibition) were aiming to provide more flexible ways of studying, to encourage technology use and social networking for educational purposes, to provoke knowledge construction through research and personal experience, to inspire intrinsic motivation for learning, to promote student independence and peer cooperation.

Generally we can conclude with satisfaction that on average 60 % of the students participated in these extracurricular activities. For us, however, it is of great importance to receive feedback from our students whether they approve this educational strategy. Therefore, to investigate their opinion and to evaluate the effectiveness of the proposed activities we conducted a survey at the end of each semester. 52% of the students indicated that the main reason they participated in the initiatives was to show their creative potential, 40% - because the themes were very interesting, 34% - to receive a certificate, 29% - to be exempted from the exam, 5% - to prepare better for the exam /more than one answer was possible/. 88% replied positively to the question "Did extracurricular activities contribute to a better understanding of the material taught in lectures and seminars?" and 62% report these activities facilitated their preparation for the exam. Another survey question addressed the possibilities for creative participation and 85% confirmed that extracurricular activities gave enough opportunities for personal expression. Most satisfactory however is the finding that 98% of the students consider that acquired knowledge is relevant and will be very useful for their future career. These results prove

that students learn more effectively when they feel engaged and see the real benefits of the obtained skills and knowledge. We also observed that the overall academic achievement level in the two disciplines has risen in comparison to previous years, which is another confirmation that the proposed teaching strategy is successful.

We tried to offer dynamic learning including discovery, analysis and interpretation which conform to the digital culture of Gen Y students and their expectations of more student-centred and interactive educational process. The teaching approach we implemented corresponds to generational characteristics such as confidence, team-orientation, achievement, customization, innovation and collaboration, and encourages every student to choose the most appropriate learning style. Since students are accustomed to social networking, as expected most of them (95%) approved the creation of the course facebook page and confirmed it has improved the communication with the lecturers and has facilitated learning. Another very useful product of our teaching strategy was the first CD of the series "Student Scientific-Educational Forums" which is already used as a helpful handbook.

Motivated by the positive outcomes, in future we plan to continue with analogous extracurricular activities, diversifying and improving them according to the preferences and requirements of our students. It would be a great challenge if the teaching methodology we propose is probated in other universities where design is taught to validate the effectiveness of this active learning paradigm for Gen Y students.

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