

The New Generations of Students and the Future of e-Learning in Higher Education

Aneliya Ivanova, Angel Smrikarov

Abstract: *In this paper is presented an analysis of the nature of newest generations – Y and Z as the social and technological factors that made impact on them are considered. Further are discussed the challenges these generations place before the Higher education. In the paper are also outlined the missions of Higher education for preparing Generations Y and Z to be successful supporters of the Digital society and the direction e-Learning should follow to adapt to the changed nature of students.*

Key words: *Generation gap, Generation Y, Generation Z, Higher education, WEB 2.0, e-Learning 2.0, PLE.*

INTRODUCTION: GENERATIONS AND GENERATION GAP

By definition generations are cohorts of people who were born in a certain date range and share a general cultural experience of the world. Each generation is shaped by the social and cultural values of the society where it grows up and by the technologies available as the generation matures.

Usually the generations are differentiated by periods of about 20 – 25 years. But concerning the latest generations, due to the explosive evolution of technologies, it became necessary to differentiate them for periods of about 10 years. The Digital revolution significantly influenced the children, born after 1981 and caused the appearance of Net-Generation. Further we are going to refer this generation as Generation Y.

The daily exposure to digital technologies formed their perceptions, skills and thinking style in a manner that absolutely differ this generation from the previous ones.

And this is just the beginning. Generation Z, born between 1994 and 2004 came of age and the Generation gap is becoming deeper.

In this paper we are analysing the nature of the newest generations – Y and Z considering the social and technological factors that made impact on them, and discuss the challenges these generations place before the Higher Education. We are also outlining the missions of Higher Education for preparing Y and Z to be successful supporters of the Digital society and the direction e-Learning should follow to adapt to the changed nature of students.

Before going further, we should ask ourselves: As lecturers, do we really manage to reach our students when we deliver our knowledge to them? In this sense, we believe, the Higher Education has a problem. It's time to admit that we have been losing the engagement of our students year after year. Now we teach the middle of Generation Y and we haven't find yet the most appropriate way to engage them.

The Higher Education is a conservative institution that is not so flexible to radical changes. But if we want to survive in the Digital world, we have to reorganize the training activities, reinvent the training tools and redefine the teacher's role. As research shows, Generation Y is still interested in Higher Education, but some researchers show apprehension that Generation Z will lose this interest and Universities will become useless after 20 years. This will really happen if we don't undertake radical changes.

The first step to problem's resolve is to understand the Generation gap between academic staff and the students. Below we are going to explore the differences between Generations X, Y and Z, considering Generation X is the younger part of the current academic staff that will have the engagement to teach the Generation Z when they become students. The Generation gap is analyzed from two general perspectives – technological and social.

THE DIGITAL NATURE OF OUR FUTURE STUDENTS

When we consider the influence of technology on Generations X, Y and Z, we could summarize the following (Table 1):

Table 1. Technology influences

Digital Revolution:
Gen X faced the Digital revolution. Gen Y came at age during the DR. Gen Z were born in a Digital World...
Digital Technologies:
Gen X started using Digital Technologies. Gen Y embraced the DT. Gen Z can not live without DT...
Internet:
Gen X and Y went on-line. Gen Z were born on-line...
Which technologies shaped the generation?
As children Gen X were shaped mostly by TV, Video and Video Games . Gen Y were shaped by PC, Computer Games and WEB . Gen Z have at disposal all the DT and gadgets available...

For Gen Y, the continuous interaction with Digital Technologies has developed:

- twitch-speed and multi-channel information processing;
- multi-tasking;
- non-linear visual thinking;
- expectation of immediate feedback and reward;
- expectation of continuous connection to WEB and immediate access to multiple information sources.

We just have to emphasize these features in order to get a notion about the nature of Generation Z – The Digital Kids.

When we are seeking to find the most relevant way to teach Gen Y, it is very important to have an idea about the way our present and future students perceive the technologies. We usually say: “I am using technologies in my courses”, but do our students really take them for technologies? The true is: they do not. They don't think in terms of technologies, they think in terms of interactions. Computers, mobile phones and WEB are not a technology. They are like roads – just have been there. They are not interested how a technology works – they just want to use it. They are not likely to try to program a computer. It is just a tool to enter their virtual world. And this is much more of importance for the Generation Z.

THE SOCIAL NATURE OF OUR FUTURE STUDENTS

When we consider the influence that parents have exerted on Generations Y and Z, we could generalize: as children Generation X were loosely controlled by parents – they were so called **latch-key kids**. As a result they became **self-directed and individualists**. Generation Y were nurtured by **helicopter parents** all the time deciding for their kids, so they became **rule-followers, close to their parents and team-oriented**. Generation Z are grown up mostly by Generation X parents, so they are likely to become **more self-directed and less team-oriented** than Generation Y.

What should we know about Generation Y students?

- Their parents treated them as special, decided for them and organized their lives.
- They have grown up with a huge array of choices and believe this is their birthright.
- They are very pragmatic and rationalistic with strong career orientation.
- They dislike doing any work that is not relevant to their personal goals.
- They are confident and tend to overestimate themselves.
- They don't respect authority, expertise, science and traditional sources of knowledge.
- Previously they have been target-based taught, tested, guided and mentored, so they have lost important for University study skills.
- Their learning style is visual-kinesthetic.
- Having short attention spans, they are poor finishers, due to their lack of patience and persistence.

Why Generation Y are bored and detached by the traditional training at the University?

- the delivery goes in a slow pace, with linear and logically sequent representation of knowledge;
- there is no immediate reward of efforts;
- the assignments are individual and require critical thinking, reflection and creativity;
- the training process is tied to the curricula – low flexibility and selectivity of courses.

Analyzing the nature of Generation Y we can point out the following

CRUCIAL CHALLENGES TO THE HIGHER EDUCATION

24/7 Facilitator

Years on end the students have been respected by the authority of the lecturers and have adapted to their teaching style. Now it is clear that the teacher-centered model does not work anymore. "Like it or not, our students cannot afford to engage in lots of educational exploration, improvisation or open-ended spontaneity. The heyday of the brilliant, if diffuse, lecturer whose wisdom might just "change lives" is over." [1]

Nurtured by Helicopter parents who decided for them and organized their lives from birth now, the incoming students will be absolutely helpless at the University life. So, they will insist on continuous and immediate help and guidance instead of trying to solve their problems and do their assignments alone. Generation Y students are more likely to treat their lecturers as facilitators rather as instructors. They would hardly appreciate and be inspired by lecturers' knowledge, expertise and experience. Contrariwise, some authors describe this generation as skeptic (not respected by authority, experts and traditional sources of knowledge) [2]. But at the same time they will need lecturer's mentoring to achieve their personal goals – getting high grades and credits.

Personalized and Adaptive Training

Since their early childhood Generation Y are addicted to environments (games, services, technologies, and all the gadgets they use) adapting to their preferences. When they come to the University they will expect the same adaptivity. Grown up as special, all the time having a variety of choices, the future students will insist on flexibility, personalized training and services, service selectivity.

Negotiation for Grades

Since they show general distaste for doing “busy work” that is not relevant to personal goals, “*respond best to external motivators and are highly rationalistic*” [3], they will overestimate their efforts and will negotiate for grades.

Lack of Qualities for University Study

From the Nursery they have been target-based taught, tested, guided, and mentored, so they have lost very important qualities as self direction, critical and innovative thinking, reflection of learning, creativity, exploration skills, understanding of abstract scientific concepts that are absolutely necessary for successful study at the University.

Researchers at King's College London asked 800 young teenagers to take tests measuring their understanding of abstract scientific concepts. The results showed that the number of exceptionally intelligent teenagers is far lower than a generation ago [4].

Professor Michael Shayer, who led the study, believes the decline in brainpower was due to target-based teaching. “*The moment you introduce targets, people will find the most economical strategies to achieve them. In the case of education, I'm sure this has had an effect on driving schools away from developing higher levels of understanding.*”

University IT environment

For each successive generation “technology is only technology if it was invented after they were born.” [5]

A challenge for Higher Education is the increasing gap between the institutional IT environment and the technology environments that Generation Y have created for themselves [5]. Today's students are avid users of Web, e-mail, telephones, and other IT resources; however, their rapid adoption of instant messaging, cell phones, blogs, wikis, social networking Web sites, and other resources that are not generally part of the core campus infrastructure leads to a host of new concerns.

After specifying the challenges we can outline the most important

MISSIONS OF HIGHER EDUCATION

1. The **first mission** of Higher Education is to provide adequate training to students, whose behavior, preferences, expectations, thinking and learning styles are far different from previous students' ones and to prepare itself for the incoming generation.

2. Despite of not having qualities for University study, Generation Y is still struggling to go to the University. However, this choice is not prompted by their wish for self-development.

Generation Y were born when the economic conditions were growing rapidly. As children they were financially secure and lived with comforts. These kids who were born during the economy boom do not know how to adjust with less. However, at the same time they have seen their parents work hard and hence know the value of hard work.

All these circumstances have formed a strong career orientation as the importance is set to payment. According to a research [6], pay is clearly the most important benefit for the future and cash is the best performance incentive for Generation Y.

The Generation Y is the largest in population living generation and the first representatives have already become employees. How do they perform at the workforce market?

Sue Honore, learning consultant at Ashridge business school has started a major research project to uncover how employers will need to adapt training and development to suit the Generation Y [7]. “*They expect employers to help them grow. Coaching and*

mentoring is a big part of this and they seem to respond positively to it," "I think we will probably start to move away from the idea of fixed formal training and move more towards flexible coaching and mentoring systems with Gen Y." Honore shares.

Here is **the second mission** of Higher Education – to develop the missing professional skills before the graduates enter the workforce market and to teach Generation Y how to become successful employees.

3. The notion “knowledge society” emerged toward the end of the 90s and is particularly used as an alternative by some in academic circles to the “information society” [8]. According to a definition the Knowledge society “creates, shares and uses **knowledge for the prosperity and well-being** of its people”. Who actually creates this type of knowledge? Such type of knowledge is created by scientists as a result from sustained research work. Nowadays it is created by Baby Boomers and Generation X, but who will create it in the future?

We can be pretty sure the term “knowledge society” was coined by Baby Boomers. If we ask the Generation Y and Z to label the society they live, they would probably stamp it as “fun” society. Inspired by commercials, TV shows, and all the entertaining stuff offered by WEB and mobile technologies, they actually live for fun. To be sure, they are knowledge creators but the knowledge they consider as valuable is focused to celebrities, life-style, luxury, entertainment, fashion.

The other type of knowledge that we consider as valuable, they just consume in order to get diplomas and well paid jobs. They are able to acquire only short-term knowledge and do not manage to reach reflection because their brains are constantly overloaded by the digital lives they live.

“The research uses logical and systematic procedures in the comprehension and transformation of the reality, in order to elaborate new knowledge. That activity requires from the researcher, curiosity, scientific knowledge, **creativity** and **persistence**.” [9] Unfortunately, our students do not have these qualities. As mentioned before, Generation Y is missing out a large segment of learning – that of exploring more deeply, enquiring, and reflection. For this generation to be successful as the thinkers and leaders of the future they have to acquire those skills.

In 1995, within an experiment a group of students were asked to think about listing the traits of a good scientist. “The children's list included that a scientist must have the ability to read and write, be a good listener, pay attention to what they are looking at, have lots of ideas, study unknown things, and have patience. A visiting physics professor from UC Berkeley reviewed the list and stressed to the children that the key which they had forgotten was that a good scientist needs to be skeptical, ask questions, and not accept everything. A good scientist needs to continually ask why. A mission of our educational system must be to revitalize our children's imaginations. It is critical that we teach our children how to think abstractly and in a nonlinear fashion.” [10]

The author of [10] discussed the WEB as one of the means that will solve the problem, but unfortunately, 14 years later we see that although WEB helped in development of non-linear thinking, it actually contributed to killing the imagination and abstract thinking.

We believe the **third mission** of Higher Education is:

- to revitalize the Gen Y's interest to science;
- to teach Gen Y how to become researchers;
- to develop the missing learning segment – critical thinking, exploratory learning, reflection, creativity and persistence.

WHY SHOULD WE BOTHER ABOUT GENERATION Y AND Z?

The answer is pretty simple: Just because we are their creators. Baby Boomers and Generation X gave them birth and nurtured them, and Generation X developed the technologies that shaped them this way. As Jeff Gordinier, author of the book "X Saves the World", shares: "*We've created all these great Websites that now Millennials waste their lives on.*"

THE FUTURE OF e-LEARNING IN HIGHER EDUCATION

Before presenting our vision about the future of e-Learning in Higher Education, let's consider how the learning occurs for Generation Y.

We can honestly generalize that at present, the learning process for Generation Y is separated in two parts:

- **formal part** – at the University, where they go by necessity, without internal motivation, only to get credentials and as a result they are constantly bored with their formal learning;
- **informal part** – outside the University, where they are fully engaged, excited and motivated in their personal virtual spaces, including social networks, social media, social bookmarks, shared resources, IM communication.

When the formal part is weakening, the professional skills and knowledge of our graduates (actually the quality of our product) are becoming worst than ever.

What is actually happen outside the University? It is just WEB 2.0 – a social rather a technological phenomenon – the focus is to the people, connections and resource sharing.

The social WEB 2.0 services should not be underestimated – except for fun, they are largely used for a very creative purpose – as powerful tools for exchange of knowledge, ideas and experience between professionals and researchers. There are many examples of blogs that became research and professional forums, even virtual places for workshops and conferences. Social networking usage is only going to increase. According to Netpop Research, there has been a 93% increase in social networking usage since 2006 and a study by Pew reveals that 75% of the 18- to 24-year-old age group have a profile within a social network [11].

It's clear that we have to engage our students back to the formal education and the way we could achieve this is through integration of students' favorite and daily used social-WEB tools in the training process.

Many lecturers have adopted some of the digital nature of Generation Y, using intensively IT in their research work and private life. But it doesn't mean they are ready to educate this generation, not to mention the Generation Z. In order to understand these students, we have to understand their favorite WEB tools and services, but not in terms of technology, rather as behavior – connectivity, engagement, interaction.

The existing Learning Management Systems (LMS) could not anymore catch and hold the attention of Generation Y, since they place the student in a passive role of fixed content recipient. Actually the Y-students expect to be connected, community engaged, actively interacting and collaborating in a personalized learning environment, constructed and managed by them.

In 2005 a group of educational technologists starts the discussions about **personal learning environment (PLE)**, and soon Scott Wilson from CETIS presents a conceptual model of next generation virtual learning environment. This model is the first graphical representation of PLE. Derek Wenmoth further develops the model, representing the interaction between PLE and existing LMS. The majority of LMS, currently in use, are server-based, and designed to be used as institutional systems. In the light of the idea about Virtual University, this creates a problem for students moving between institutions, since they may need to learn how to use different environments

based at different institutions. The most significant benefit of a PLE is that the students have one set of tools suited to their needs, which they can use to interact with a number of different institutions throughout their studies.

Actually we believe **the evolution of e-Learning in Higher Education should take the following direction: the existing e-Learning environments participating in future e-Learning as content repositories, but the active part of learning process covered by PLE, where the students, using their favorite WEB services and tools, will construct their knowledge in constant collaboration.**

The challenge of evolving pedagogy to meet the needs of Net-savvy students is daunting, but educators are assisted by the fact that Generation Y values education. But what about meeting the needs of Generation Z?

WHAT TO EXPECT FROM GENERATION Z?

Being born in a digital world, **the Generation Z adapts to technology like no other generation and highly depends on it.**

They are very individualistic, and may not give too much importance to family values. **They also will be not team players.**

They are less career-oriented than the Generation Y but have strong opinions and do not take suggestions well. Psychologists are noticing a drastic behavior change from Generation Y to Generation Z. For the Generation Y, the emphasis has always been career and education whereas the Generation Z does not believe in career and formal studies either. **Education and work plays a minimal role in their lives and they do not see them as means of survival.** By the time the Generation Z starts working there might be severe shortage of professionals like doctors and scientists. But such professions may not hold any value for Generation Z.

Their communication takes place mostly on the WEB and they take it for granted. Therefore they show very little verbal communication skills and may not do very well in areas of public speaking. They also lack expression, confidence and interpersonal skills. In these qualities they are absolute opposite to Generation Y.

Generation Z processes information at lightning speed. They are used to instant action and satisfaction due to Internet technology and may be very impatient as they desire instant results.

Generation Z lives in the virtual world and they can reach out to any place through the WEB. They are less likely to travel and step out of their homes for anything. **They will try to get everything to the place they live.**

Generation Z being bad listeners have less regard for what others have to say and they do not pay attention to others. They don't believe in living according to social norms. Their society exists on the WEB where they speak their mind out and express their opinions.

Resli Buchel reveals ten reasons why the Internet-loving kids of today will become the technology savvy adults of tomorrow [12], facetiously proposing "The Ten Commandments of Generation Z":

1. You shall always be connected
2. You shall always be mobile
3. You shall use computers at work
4. You shall use computers at play
5. You shall have many friends that you will never meet
6. You shall have a second life
7. You shall be ultra-independent
8. You shall multi-task
9. You shall always be in demand
10. You shall invent a whole new language

CONCLUSIONS AND FUTURE WORK

It is more than clear that the Higher Education could not stay untouched by the radical changes in the nature of present and incoming students.

In order to survive as a vital institution the University should undertake crucial transformations concerning the teaching approach, the way of communication with the students and the organization of administrative services.

When we consider the training process, the adoption of WEB 2.0 services and e-Learning 2.0 techniques is unavoidable if we aim at catching up Generation Y and Z students. It is also necessary to directly engage the students in a dialogue about how they would like to see the faculty's use of technology to help them learn more effectively.

At the same time it is important for the academic staff to be aware that customization is central to the definition of technology for Generation Y and Z students – it is something that adapts to their needs, not something that requires them to change. The incoming students will have significant expectations regarding the use of technology to support learning, but, those expectations are tied to faculty members and their ability to use technology correctly.

According to administrative issues, Generation Y and Z will expect their problems to be solved – quickly and easily and the use of technology to improve student services will be critical to the University, since the students will expect services delivered through technology.

The Generation Z will place more daunting challenges to the Higher Education and the sooner we start preparing our training approach to address their learning style, the better we will manage to attract them to education, research and science.

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ABOUT THE AUTHORS

Aneliya Ivanova, Principal Lecturer, PhD, Department of Computing, University of Rouse, Phone: +359 82 888 827, E-mail: Alvanova@ecs.ru.acad.bg.

Angel Smrikarov, Assoc. Professor, PhD, Department of Computing, University of Rouse, Phone: +359 82 888 249, E-mail: ASmrikarov@ecs.ru.acad.bg.

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