

There Is No App for That – Adjusting University Education to Engage and Motivate Generation Z

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Abstract

As a research subject representatives of Generation Z are limited by their age due to the fact that the oldest of them are only coming of age now. These are the ones that are just starting their university education and their plans and ambitions differ from those that characterized their predecessors. During next few years universities will be populated by the students whose life span in shorter than that of the internet. What was learned and adopted by Generation Y is a reality that Generation Z grew up in. They are used to knowledge being one click away, they are bored if they are not engaged but they are up for challenges, have high expectations of themselves and value feedback.

Generation Z will most likely change the university education, if not as students then as educators. The burning question is, how can science education adapt so it can transform while keeping its integrity and premise.

1. Introduction

It has been over a decade since “digital natives” [1] have been identified and characterized. Recent marketing surveys depict Generation Z as future entrepreneurs [2,3], who view college degrees as important [2–4], but want to be responsible for creation of their own majors and have opportunities for learning practical skills both in a university setting and through professional experience [2]. Fifty percent of them will obtain a college degree with teachers facilitating this learner-centric and learner-adaptive process, but education for them is no longer a stage of life but rather a non-linear life-long reality [4, 5]. Although getting and keeping their attention will be challenging [3], their opinions are heard and considered as they communicate often and quickly, even if not precisely [3, 6].

Technology has opened the boundaries between their professional and social lives, education and entertainment [7], as well as, has blurred the lines between convenience and expectation. Representatives of Generation Z live part of their lives at a threshold of both networked and disconnected realities [8]. While those born between 1995 and 2010 have not experienced society without technology, they cannot be characterized only by their relationship with technology.

2. Adaptation of education

Despite recent survey reports, there is no general consensus among researchers [1, 9–11] regarding typical characteristics and notable differences between this generation and its predecessors. What is agreed upon is that the heterogeneity of the group is undeniable. The level of digital proficiency which characterizes both Generation Z and, to a large extent, all digital natives [12], varies not only with age but also with social, economic status [13], gender, and general interests [14]. Using an all-inclusive label that puts telecommunications as a defining characteristic of this generation is inaccurate and misleading [15]. The characteristics of this generation are more complex than their attitude towards technology [11]. With such diversity among digital natives, any generational generalizations fail to recognize cognitive differences in young people which affect the educational process [10].

Concurrently, emerging technologies offer a range of learning activities, even though evidence of digital technologies creating real transformation of teaching and learning remains ambiguous [16]. The use of technology in education must be grounded by sound educational techniques [17], such as blended learning or in-class assignments. As a consequence, management and alignment of pedagogical, technical and administrative skills is necessary for proper utilization of technology. It is also important towards successfully making technology a tool for adjusting teaching styles, development and expansion of existing educational platforms [12].

2.1 Adaptation to technological proficiency

As the adoption of technology in teaching and learning is already occurring, the preparation for its responsible, critical, reflective, and educational use should be a part of curriculum development from the onset [18]. With an increasing wealth of online resources the demand for evaluation and filtering of information exists [16]. These tasks should be part of a facilitator's objectives as technological competence will include an ability to responsibly and appropriately use devices and services in varying settings.

The tools available to digital natives were predicted to propagate into classrooms, alter teachers' roles [19] and serve as a catalyst for change in teaching styles [20]. This trend will continue, resulting in adapting classrooms, delivery methods and platforms to include technological development. For i-gens internet, videos, simulators, and games are not novelty, they are everyday reality and as educators we are required to integrate them as standards, not simply employ them as gimmick. Using technology, without adjusting teaching styles, employs the resources without exploring their capabilities. On the other hand simply making technology the focal point of the classroom does not serve an educational purpose. Instructors' set up of the educational context and its content via creative use of available digital resources can lead to successful integration of technology. To simultaneously keep education learning-centered, students will need help taking advantage of the educational benefits technology presents [15] and it is the role of the educator to facilitate this process. Despite the label and general trend, no assumptions can be made regarding technological proficiency and preferences as evidence suggests that not all students are experts with technology [15], and that many lack the competence with technology to adequately benefit from its use in the classroom [21]. Additionally, technological advances come with a financial component [5]. Making learning dependent upon the possession of devices and access to online content may form a non-inclusive and uncomfortable learning environment. One has to be careful not to turn technology, which supposes to simplify and broaden the educational approach, into an obstacle.

2.2 Adaptation to learning styles

Theories on learning styles acknowledge differences between individuals. Learning preferences are dynamic and can be modified depending on the task and history of success [22]. Incorporating various teaching strategies allows educators to broaden their audience and its exposure to a range of delivery styles. The McCrindle report [23] suggests that for representatives of i-gens, visual learning style dominates over others. While that may be the case, focusing on one style of delivery marginalizes other groups in the classroom and diminishes overall learning opportunities.

Immersion into a technology-rich culture is claimed to influence skills attributed to digital natives but not clear how some of the technologically innate skills can be directly and effortlessly applied to learning [24]. In addition, characterization of the skills have to take into consideration discrepancies across developmental stages [10], background, social, economic, cultural status and personal interests.

Even though among i-gens proficiency with communication devices may be profound, some suggest that in-person communication skills have become deficient [25]. If that is the case, as educators, we have an obligation to create a framework in which the acquisition and development of communication skills can occur. If a weak area is identified, opportunities across all subjects and levels should be created to strengthen it. Pushing this responsibility onto other school systems is neither responsible nor ethical. Each discipline has its own specific language that is required to read, understand, process, and express knowledge.

Learning is a natural process affected by motivation, both external and internal, developmental factors, social and cultural diversity, individual differences and cognitive filters. It involves a creation of meaningful representations of the available data and construction of links between existing knowledge and new findings in a way that is unique and meaningful [26]. Digital integrators are surrounded by an abundance of information readily available at their fingertips. Therefore, more than ever, learning will have to focus on the creation of links between the pieces of information and formation of the purposeful network between them.

The idea of learning-centered education has been introduced before Generation Z entered the school system [27]. Since then continuous displacement has been happening from focusing on the content into concentrating on the processes and those involved in them. For at least another decade universities will be populated by representatives of this generation. Educators should be aware of the characteristics of Generation Z as not to generalize them or to simplify the teaching process, but to maximize the efficiency and effectiveness of the learning experience. The Zeds are the first group with global access to multiple educational platforms, which makes it easier for them to avoid a physical

classroom setting while pursuing their education. This puts additional stress on finding a balance between the attractiveness of a delivery mechanism and the high quality of education.

In order for classroom activities to be meaningful, they must be carefully designed to provide evidence for the targeted idea. Whether delivered with assistance of the technology or supported by in class demonstration, their focus should remain on the learning process, not on the medium used to achieve the objects. Students can be more easily intellectually engaged with an interactive lecture that encourages them to consider examples drawn from their personal experiences. It may be more important than ever to incorporate STEM and STSE education programs, showing connections between adjacent subjects like science, technology, engineering and mathematics but also expand references to history, folklore, fine arts, sociology, ecology and popular culture.

With i-gens desire to gain practical experience, applicability of learned material and validity of teaching and assessment methods will be questioned and therefore should be explainable. Clear justification of expectations, commentary on approach to deadlines, clarification of motives behind educational techniques, reasoning behind methods of assessment and grading provides a setting in which not only the content is learned but context for the experience is created. It is equally important to give them feedback and request it, keeping the communication open throughout the educational process. Involvement in methodology makes them active participants, which positively influences motivation.

3. Conclusions

In the teaching process, the ability to adapt is an essential skill. The techniques chosen to deliver the material should be adjusted and tailored to fit physical constraints of the class (lecture hall, class size, and available tools) and the level, interest and background of the students. In the twenty first century, in the era of information, facts and their interpretations are, for most people, one click away. Therefore teaching should focus on involving students in the methodology of acquiring and processing knowledge, its selection, organization and application so that they are able to achieve control over the learning process.

Anderson [28] brings up one more important point - the Zeds will be the ones teaching generation *alpha*. They will be the ones in charge of facilitating future learning environment, dealing with the furthering of development and transition of certain skills. We are the educators responsible for preparing them for that future.

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