GENERATION X, Y AND Z: CHALLENGES FOR TEACHING AND LEARNING

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Abstract

The rapid technological developments and its inherent changes cause the technologies to work as timeline paths, allowing a new generation to arise every ten years. The emergence of these new generations in a limited period of time has caused a revolution in society, because unlike what happened in the past, now there are several generations occupying the same work, schooling and leisure spaces. These generations are very different and that is why there is a kind of revolution in its own dynamic, because some of those crystallized habits and behaviours suffered, over time, recursive changes in very short periods, requiring individuals to adapt to a variety of people with very distinct tastes and habits and, more importantly, with different mental models [1]. In this article we will focus our attention identifying the characteristics of generations X, Y and Z, exposing succinctly their desires, aspirations and its relations with the world, as well as their relationship with school and, more specifically, with learning. As a corollary of this relationship, some strategies will be presented that we believe to be of great use in the teaching of generation Y and Z.

Introduction

According to [1], the term generation was often used to identify the youth segment that followed their parents, marking a temporal boundary of roughly 25 years. However, this reality has changed since the context in which we live, deeply influenced by digital technologies, has caused major changes in society, with direct reflexes in the behaviours, habits, attitudes, ways to communicate and relate to people. In fact, technologies have contributed to the emergence of quick changes, functioning also as timeline paths, causing that every ten years there is a new generation [1].

When we talk about generation we think about people who were born in a time interval in which the socio-political and economic was and still is a core component to determine different types of behaviour, attitudes, and influence the way we teach and, above all, how we learn. We refer here in particular to generation X, generation Y and, more recently, generation Z [2]; [3], which we will describe in more detail in the course of this article.

The emergence of these new generations in a limited period of time has caused a revolution in society, because unlike what happened in the past, now there are several generations occupying the same work, schooling and leisure spaces. These generations are very different and that is why there is a kind of revolution in its own dynamic, because some of those crystallized habits and behaviours suffered, over time, recursive changes in very short periods, requiring individuals to adapt to a variety of people with very distinct tastes and habits and, more importantly, with different mental models ([1].

We believe that one way to try to understand the various features of this mix of interests and behaviours is through the generational theories. These theories can provide us some evidence, making it possible to define the different attitudes and behaviours of these segments, which we consider to be of great value so that we can understand or at least interfere in its dynamics [4]. These theories can also assist us to understand some typical behaviour of these generations, whether in social or in work relationships, but more importantly, how these people learn and build their knowledge.

We believe that in all segments the conflict between generations is present, however, in the educational

context, it takes a larger dimension because, as [5] stated, it seems that school insists on not recognizing the social changes stemming from the current context we live in (network society), which interfere directly in its dynamics. As referred by [6] "Learning and schooling are social processes in the world and as such both are implicated in social reproduction and social transformation" (p. 4).

One cannot conceive a way to conduct learning as it was in the old days. The interests and aptitudes were quite different. Nowadays, teachers need to understand that the way they learned, even if it has been successful, needs to be reviewed, since it would not benefit a generation born in a context where there is a constant change in information, according to what [7] called the "half-life of knowledge". Furthermore it is not just in relation to students that this is visible. This conflict can also be perceived in professional relationships between the veteran teachers and the newcomers.

We believe that this is the major challenge of the educational system, since in its vast majority consists of different generations, leading us to some questions: how to consider the learning of students whose teachers are part of another generation, who learned in different ways? How to keep the enthusiasm of a generation that was born immersed in digital technologies and, therefore, has different ways of learning?

In order to find plausible answers to these questions, we will focus our attention first on identifying the main features of generations X, Y and Z, exposing succinctly their desires, aspirations and their relations with the world, school and more specifically, learning. However, in this work we will focus only in the reaction established between generation X, Y and Z. As a corollary of this relationship, some strategies will be presented that we believe to be of great use in the teaching of generation Y and Z, which is held by the generation X and, finally, we will conclude with a final reflection.

Featuring different generations

[8] used the concept of group to try to define what would be a generation. According to them, a generation is a group of people who have affinities with respect to age, conception of the world, behaviours and attitudes typical of an experiential life. These generations could be classified in five different groups:

1. Youth – more or less 21 years of age, which the legal age in most countries. At this stage, the young people are trying to figure out the values they will incorporate into their lives;
2. Rising Adulthood – people in this stage are more or less 43 years of age and tend to have a greater personal and professional projection;
3. Midlife – includes people with more or less at the age of 65, which in many countries is already retirement age. They have already made their contribution to society professionally, but still retain a good cultural legacy, which could contribute to social development;
4. Elderhood – with more or less 80 years of age, the main role of this generation is to transmit values in various social segments;
5. Late Elderhood – group of people with more than 80 years of age. They represent a segment of society who needs care, who are remembered and cherished. However, with the advancement of science they may be considered an active group in society.

If it is true that the classification quoted above was a reference to consider along with the rapid changes brought by digital technologies, we have to think about another referential. In this context, several proposals appear to explain the formation of new groups of people who do not fit the old classifications. According to [3], the term generation X was coined for the first time by [2], in his book "Generation X: Tales for an Accelerated Culture". This book became an international bestseller; the term became popular to characterize a generation that was born in a given period of time, and as a logical progression, the terms Generation Y and generation Z emerged to characterize subsequent generations, which we will be referring to.

- **Generation X** – people who were born precisely between 1960 and 1979. In Brazil, were those who painted the face to overthrow President Collor, witnessed the spread of AIDS and saw the technology development, paid with the cruzeiro, cruzado and new cruzado. This generation is attached to titles, positions, merit and effort, and is concerned about stability. They remain resistant to technology, do not seek innovation at work and are more dedicated to work. They also rely on the experience of the older and on the energy of the younger [9].
- **Generation Y** – They were born between 1980 and 1995. The internet has opened the door for generation Y. According to Second [10], a person from generation Y has a different mental model, is a professional more inclined to pleasure, impatient and a career climber. Generation Y does not enjoy an enclosed work and does not give much attention to hierarchy, is never satisfied, because in his view time does not stop, things are constantly evolving and life should be like this too.

- **Generation Z** – they were born after 1996 and it's the latest generation. It was also defined by [11] (1998) as the digital natives, i.e., those people who were born in a world filled with technology and because of that have distinct habits and attitudes comparing to previous generations.

The school and its relation to Generations X, Y and Z

According to [4], most of the studies about the generational theories do not try to relate with studies about education. Although the study of this theme has a higher concentration in the United States, it was in Australia where first appear the concern of some theorists to discuss, though in a limited way, the relation of generation X, Y and Z to the school context [4].

So, from a scientific point of view, the vision of this relation is still in its embryonic stage, though realizing in practice significant differences in behaviours and attitudes of this new generation. In order to illustrate some of the differences, Table I synthetically enumerates the main differences in the use of technology.

Table 1: Differences between generations X, Y and Z in the use of technologies [3]

Digital Immigrants	>	Digital Natives
GEN X (1960)	GEN Y (1980)	GEN Z (1996)
TV	High-definition TV	Web TV
Video	Video games	Online gaming
Analogue cell phones	Digital cell phones	Bluetooth phones
PCs	World Wide Web	Second Life (virtual world)
Vinyl records	CDs	DVDs
Fax	E-mail	Skype

Looking closely at the Table we realized that there are significant differences concerning the use of technologies by different generations. Roughly speaking, generation X is analogue, while generations Y and Z are digital. Nowadays, for example, you just need to be connected to Internet to know what is happening in the world. The question of the physical space, very prominent to people of generation X, now it is not considered an obstacle anymore because the digital technologies favoured the deterritorialization of the physical space [12]. Today we can access information anywhere and anytime. Unlike in the past, children now learn playing, interacting with colleagues, sharing ideas and seeking alternatives to overcome the challenges imposed by games together.

The forms of communication also changed. Nowadays the generation Y has no borders to communicate in social networks, with Smartphone and especially with Bluetooth phone, mainly, which is a very short-range Wireless technology used to create PANs (Personal Area Networks), among your own devices, thus allowing to do multiple activities at the same time. This is clearly a hallmark of this generation, because while they study, hear music, access to e-mail, they communicate with colleagues in social networks, visit links, etc.

Devices to search information also changed radically. In addition to using the Social Web applications, there is also the possibility to merge in the virtual world, a world of simulations, and with this will start learning and developing higher psychological processes [13]. This explains the changes in the way these generations (X and Y) relate, communicate and learn.

This might also explain the reason why many schools insist on not accepting these differences, which we think to be the great impediment to innovation and to change their practices. We do not want to proclaim that students of generation X and Y must not be taught by the previous generation(s), because history proves that we have always been taught by older generations.

The issue here is not only age, but mainly because now the differences are unprecedented, which are dictated primarily by the digital divide [3]. So, we have to agree with [11] statement that we currently have digital immigrants teaching digital natives. This becomes a greater challenge to these teachers who mostly had a technology-free childhood if compared with digital natives' generation, who had access to the ultimate in terms of technological innovation. We believe that the first step for teachers should be to overcome their own prejudice to understand that reality has changed and that they need to seek alternatives under penalty of turning schools in places that are no longer seen as spaces of production and knowledge but more like spaces of encounter between friends (Veen & Vrakking, 2009).

Teachers must also bear in mind that they cannot continue to educate students as if we were still in an industrial society, whose motto was to prepare people for work in an economy whose striking features was the large scale production, execution of routine tasks and that was used to stability in employment as a result of merit or effort. In this context there was a passive education where students listened in silence, being simply the depositary of contents [15]. Most of these people were formed to carry out repetitive functions, to solve problems and think laterally [3].

Now society is living its third wave [16] or even being considered by many theorists as the post-industrial society [17] whose technological convergence is a reality and requires innovative and creative people, prepared to problem-solving and most importantly, that work anywhere and not necessarily remain stuck to a physical place.

To be able to develop competences and skills needed in a globalized world, teachers must revise their roles and mission aimed at creating activities that can stimulate students' creativity, self motivation and, above all, they must be flexible, without however allowing anarchy (Robison, 2011). According to Robinson (2011), this is because in the current situation, innovating, innovation and change are imperatives, taking into account three contexts:

> *The first is that we are living in times of revolution; the second is that if we are to survive and flourish we have to think differently about our own abilities and make the best use of them; third is that in order to do so we have to run our organizations and especially our education systems in radically different ways (p. 5).*

[18] believes that we are all born with a set of skills that at some stage of life stood aside because, in theory, the school seeks to teach its students a pre-made model of what they should be as adults. In the author's opinion, this model might not correspond to the needs of a networked society.

Strategies to be adopted

The question is what measures or strategies to adopt so that education could become something that encourages students and, most importantly, that prepares them to live in a world of rapid changes. Do we need to invent the wheel for education? According to [3], the easiest way would be trying to innovate teaching methods, to realize how students behave outside classroom, i.e., what motivates and interests them. It is in informal contexts that the author believes we can take great lessons from how this generation learns.

> *Perhaps they realize how much kids learn from their peers and the significance of social interaction in children understanding, engaging with, and remembering new information. Perhaps they see how small successes build confidence and how much children need the encouragement of celebration. They're bound to observe the prevalence of music—the way kids have a soundtrack to almost every aspect of their lives. Perhaps they recognize the potential of music to encourage positive behavior in the classroom from using it in the background to set an emotional tone to signaling the beginning and end of activities. They certainly notice that kids learn best and fastest when they're having fun—or when they can see an immediate benefit from applying their learning (p.5).*

According to the author, for the newer generations to learn it is necessary that feel involved in their own learning. This can be verified through the activities carried out or by the classroom environment. In addition, the learning environment for this new generation has to be highly interactive, engaging, colourful, with audio, images, similar to the spaces that they attend too in cyberspace.

On the basis of this principle, we will show below some strategies that we think are interesting to adopt in the context of the classroom, to provide a kind of learning that matches the needs of this new generation. We take as a reference the studies conducted by [3] whose title is High-impact Teaching Strategies. These strategies have epistemological constructivism as a prerequisite because knowledge is not a simple transfer of information from the mind of the teacher to the student. On the contrary, knowledge is conceived as something that needs to be accommodated and assimilated in the students' cognitive structures, thus enabling a significant learning.

- Appreciate the work and initiatives of students in the classroom – this is a strategy which we think is quite significant, because it students will feel more confident in future challenges;
- Learning crests – to the author, the interest in learning a particular topic by generation Y and Z, works similarly to a wave, i.e., with constant goes and comes of sudden ideas. Their rhythm needs to be respected and know that their learning pace is just like a wave breaking on the beach and followed by many others, and it requires a time so they can process the information;
- Create an environment where they will understand that learning can also be an entertainment,

proposing the introduction of games or simulations;

- Contextualize learning, allowing students to apply the content learned in their life experience or points of views;
- Monitor student learning, with challenges and goals, so that they feel confident and well aware about what the teacher expects of them;
- Continuous surveillance, giving enough time so that they can be able to organize thinking;
- Change the arrangement and the way in which they study, dispense the traditional classrooms where students learn sitting. It would be good if students could move because, according to some studies, this could facilitate blood circulation to the brain [3];
- Environment with Music – the correct use of music can create a sense of high social learning and motivate them towards educational practice;
- Teaching has to bring something new – novelty works as a magic potion, concentrating high levels of energy and attention on students, because it raises their curiosity;
- Engage students in their learning process, for example, in content building in the evaluation process, so that they can feel a greater involvement and sense of responsibility;
- Time – when new information is processed, students need to have enough time to process it. Memorizing and parallel tasks could be ways to help in this process;
- Socialization – this is a way students find to express what they are learning. When talking, students are organizing and developing thought. We believe that virtual communities as supporting presence can be an added value.

We believe that these strategies may help teachers in educational practices. However, we believe to be relevant to examine this generation question in more depth, because according to some studies carried out by [3], generations Y and Z learn very fast and with some ease. However, they do not deal well with pressure or threats verified in learning situations. They are enthusiasts of significant contents and especially virtual environments that encourage their social interaction as actors in the apprehension and construction of knowledge.

Final considerations

Throughout the text, we tried to specify some characteristics of generations X, Y and Z and relate with some teaching strategies that best suited the last two generations who have as hallmark being anxious and impulsive. We also believe that many of these strategies are already being used by many teachers. We cannot ensure nor do we intend to give recipes, because when dealing with people, the dynamics change and we have to take into account the peculiarities of a specific group, even all the groups have something in common, the differences need to be respected.

However, we believe that we have contributed to the rethinking of role of school and teachers and we hope to have given rise to future research and studies that will help the scientific community and school itself to handle these peculiarities and most importantly, to create a warm and inclusive environment that recognizes and accepts the differences, expecting to learn mutually.

Acknowledgements

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