EDUCAÇÃO:
ATUALIDADE E CAPACIDADE DE TRANSFORMAÇÃO DO CONHECIMENTO GERADO

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AMÉRICO JUNIOR NUNES DA SILVA
(ORGANIZADOR)

Atena Editora
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APRESENTAÇÃO

Diante do cenário em que se encontra a educação brasileira, é comum a resistência à escolha da docência enquanto profissão. Os baixos salários oferecidos, as péssimas condições de trabalho, a falta de materiais diversos, o desestímulo dos estudantes e a falta de apoio familiar são alguns dos motivos que inibem a escolha por essa profissão. Os reflexos dessa realidade são percebidos cotidianamente no interior dos cursos de licenciatura e nas diversas escolas brasileiras.

Para além do que apontamos, a formação inicial de professores vem sofrendo, ao longo dos últimos anos, inúmeras críticas acerca das limitações que algumas licenciaturas têm para a constituição de professores. A forma como muitos cursos se organizam curricularmente impossibilita experiências de formação que aproximem o futuro professor do "chão da sala de aula". Somada a essas limitações está o descuido com a formação de professores reflexivos e pesquisadores.

O cenário político de descuido e destrato com as questões educacionais, vivenciado recentemente, nos alerta para uma necessidade de criação de espaços de resistência. É importante que as inúmeras problemáticas que circunscrevem a formação de professores, historicamente, sejam postas e discutidas. Precisamos nos permitir ser ouvidos e a criação de canais de comunicação, como este livro, aproxima a comunidade, de uma forma geral, das diversas ações que são experenciadas no interior da escola e da universidade, nesse movimento de formação do professor pesquisador.

É nesse sentido, que o volume 6 do livro **Educação: Atualidade e Capacidade de Transformação do Conhecimento Gerado** nasceu, como forma de permitir que as diferentes experiências do [futuro] professor sejam apresentadas e constituam-se enquanto canal de formação para professores da Educação Básica e outros sujeitos. Reunimos aqui trabalhos de pesquisa e relatos de experiências de diferentes práticas que surgiram no interior da universidade e escola, por estudantes e professores de diferentes instituições do país.

Esperamos que esta obra, da forma como a organizamos, desperte nos leitores provocações, inquietações, reflexões e o (re)pensar da própria prática docente, para quem já é docente, e das trajetórias de suas formações iniciais para quem encontra-se matriculado em algum curso de licenciatura. Que, após esta leitura, possamos olhar para a sala de aula com outros olhos, contribuindo de forma mais significativa com todo o processo educativo. Desejamos, portanto, uma ótima leitura a todos e a todas.

Américo Junior Nunes da Silva

SUMÁRIO

CAPÍTULO 11

LEARN? WHO WILL TEACH THE NEXT GENERATION? THE TEACHER, MAYBE

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ABSTRACT: Each social generation was influenced by specifics ambient conditions. In some way all social resources offered made changes at each generational group member. Considering this point of view the current paper presents a study on university students from South and North America (N = 249), seeking to understand students' preference when it comes to learning individually or in teams. Data collection used a questionnaire with open questions and descriptive statistical analysis. The results, obtained through qualitative and quantitative investigations, showed that the students mostly prefer to study in teams. Studying alone appeared as the second most employed form. The study also provided information on preferred study strategies and whether the student realized that the university had influenced their way of studying. It is considered that research has conducted a reflection, which a priori, directed to higher education, but is believed to be useful to other areas of knowledge.

KEYWORDS: engineering; generational groups; study in teams; college education; students voice.

1 I INTRODUCTION

Successive generations seem to have particular skills and behaviors, thus allowing from there understanding the profile of the

people who constitute them, like students and professors, considering that the characteristics between students and professors from different social groups are information. In the daily life of classrooms, it is not always possible to understand the students' profile, and the teacher is the connecting element between pedagogical content and the students are representatives of their respective generations. In this context, we can bring the vision of Vieira (1993, p. 27).

Man sees the Universe in a certain way that is typical of him, a particular perspective. To be exact, every living species perceives the Universe in a manner projected by its particular evolution and level of complexity; an adaptation to the environment, necessary for survival.

Gursoy et al. (2008) propose that the term "generation" refers to people who experience events and social changes in the same period of time. Strauss and Howe (1991, p. 60 apud Keeling, 2003) have defined generation as "[...] a coexistent group whose extension approaches the period of a phase of life and whose boundaries are set by peer personalities". They further defined peer personality as "[...] a generational persona recognized and determined by: (a) common age location; (b) common beliefs and behaviors; and (c) perceived participation in a common generation (p. 64)." Beirne (2008) generation has defined itself as a group of people with certain common attitudes and behaviors that are different from the previous generation.

In this research, the term "generation" will be considered as one that identifies the succession of a certain social group that can be characterized by the resources and socio-technical aspects related to a given period of time as we can see at Tables 1 and 2.

Authors	Year	G.I.*	Silence Generation	Old Boomers	Young Boomers	Baby Boomers	X Generation	Y Generation or Millenials	Z Generation	Alpha Generation
Sos	2017	-	-	-	-	-	-	1985 to 2000	2000 to 2005	After 2010
Seemiller & Grace	2017	-	-	-	-	-	-	-	1995 to 2010	-
Argolo	2016	-	-	-	-	1948 to 1963	1964 to 1977	178/80 to 2000	2000 to 2010	-
Santos & Yamaguchi	2015	-	-	-	-	-	1960 to 1980	1980 to 1990	1990 to 2010	-
Schawbel	2014	-	-	-	-	1945 to 1964	1965 to 1981	1982 to 1993	1994 to 2010	-
Magazine Advoco Brasil	2013	Before 1937	1937 to 1945	1946 to 1954	1955 to 1964	-	1965 to 1976	1977 to 1992	-	-
Monk**	2009	-	-	-	-	1940 to 1960	1960 to 1980	1980 to 2000	-	-
-	-	Baby Builders				Baby Boomers	-	-	-	-
McCrindle	2012	1925 to 1945				1946 to 1964	1965 to 1979	1980 to 1994	1995 to 2010	

-	-	Veterans	-	-	-	-	-
Andrade et al.	2012	Born until 1945	1946 to 1964	1965 to 1979	1980 to 1990	mid 1990s	-
Strauss & Howe***	1991	-	1943 to 1960	1961 to 1981	1982 to 2003	-	-

Table 1. The different literatures offer a very wide variety in the periods of each generation.

Source: authors (2019).
* Interbellum generation. (Monteiro, 2010);

** Monk (2009, apud Shalcross, 2009);
*** Strauss and Howe (1991, apud. Keeling, 2003).

The Interbellum* and Silent* generations would be now 131 and 111-year-old people respectively (Robinson, 2017), thus falling outside the parameters of this study. Generation Y** is considered the first to have greater knowledge compared to previous generations. They want to work for a living, but they do not want to live to work. By capturing events in real time and connecting with a variety of people, they have developed the systemic view and accepted the diversity (Maldonado, 2018). The Alpha / Alpha*** generation is still very young and does not have enough information to type its profile (Beraldo, [s.d.]), especially in the case of this research.

The research aims to hear the students' voices from different universities and nations and discover how they deal with the learning process. All the education process will depend on what (subject), where (university) and who (teacher) it is teaching (Henderson; Selwyn, Aston, 2015).

Generations	Values and attributes	Management Style	Job change	Average time in each job/yrs	Career Goals
Interbellum*	*	*	*	*	*
Silent*	*	*	*	*	*
Old Boomers*	Optimism, involvement, antiwar, equal rights, professional ethics	Command and control	Regress	7	A career for life
Young Boomers*					
Baby Boomers*					
X	Skepticism, fun, informality, balance, education, pragmatism, adaptable, managerial loyalty	autonomous	It is necessary	5	Own a portable career
Y or Millenials**	Realism, security, diversity, morality, competitive spirit, desire protagonism.	Collaborative	Considered something routine	2	Build multiple careers
Z	Technical knowledge, global vision, flexible, tolerant of different cultures	Collaborative	Natural and no loyalty	-	Have your own business
Alfa or Alpha***	***	***	***	***	***

Table 2. Social-technical transformations / typification.

Source: adapted from Schawbel (2014), Robinson (2014), Maldonado (2018) and Beraldo ([S.d]).

2 | LEARNING STYLES

Before learning, it is important to understand the concept of knowledge. For Schön (2007, p. Vii), professional knowledge begins with the competence and talent already inherent in skillful practice, especially "reflection in action" 1, ie, "[...] think about what they do while they do it", developed in uncertain, specific and conflicting situations. This techno-rationalist view and the epistemology of practice seen predominantly in universities threaten the competence of the professional future. Finally, Schön (2007) says that the standardized curriculum of schools and the division between research and practice leave no room for reflection on action, thus creating a dilemma between rigor and relevance for educators, professionals and students.

Schön's question gives us a dimension of how the university offers knowledge. Considering the academic learning and its future performance in the labor market as an action for the sustainability of the systems, being the student and the motivation of this relationship, can be correlated to what Schumpeter (1988) said "[...] the dynamic imbalance provoked by the innovative entrepreneur, rather than balance and optimization, is the 'norm' of a healthy economy and the central reality for economic theory and economic practice." In education, subjects are often instructed to repeat fractional models, preventing the student from perceiving all knowledge. Knowledge of the postindustrial revolution no longer believes in balance as sustaining the environment; in the paradox, it seeks complementary energy that drives innovation in a broader view of real problems (Nonaka; Takeuchi, 1998). Today it is encouraged that the student develops the ability to dialogue about a problem, combining it in different points of view and developing more complete proposals. Generally, extended vision is a consequence of working in teams (Buckley, 2000).

The types of knowledge are distinguished into two, the explicit and the tacit. The explicit can be represented by a quantitative survey full of statistical analysis that confirm a given fact. Tacit knowledge is essentially the impressions and knowledge, often unsized, lived and experienced by the researcher. Thus, the types of knowledge themselves are paradoxical (Nonaka; Takeuchi, 1998). According to Carl Rogers (1969 cited by Moreira, 1999), facilitating learning is the main objective of education. The learning principles proposed by Rogers (1969) illustrate the existing relationships that exist in people's daily lives, whether in a technical, professional, social or academic environment (Table 3).

Learning Principles	Characteristics of the learning principle
Human beings have natural potential to learn	It is human nature to be curious about the world around you. Therefore, the student will have a natural desire to learn and this is a trend that can be trusted.
Significant learning	The student perceives in the exposed content the relevance to their goals. The person learns what seems significant to him.

Learning that involves change in self-organization - self-perception - is threatening and tends to give rise to residency	For many people, as long as others are right, they would be wrong. Accepting other people's values can threaten their own values, hence resistance to such learning.
Self-threatening learning is more easily perceived and assimilated when external threats are reduced to a minimum.	A student weak in reading or any other knowledge already feels threatened and misfit. When this student is exposed to his or her own group, for example when asked to interpret aloud, the possibility of success is reduced, but if welcomed and respected, they tend to move forward.
When the threat to self is small, one can perceive the experience differently and the learning can proceed	In this case, it can be considered as an extension of the previous principle. When the student feels safe and not threatened, differentiation can be perceived and learning carried out.
Much of meaningful learning is acquired through acts	One of the most effective ways to promote learning is to place the student in direct experiential confrontation with practical social, ethical and philosophical or personal practical problems, as well as the research problem.
Learning is facilitated when the student participates responsibly in the learning process.	When the student actually makes a commitment to what he teaches, he discovers his own learning resources, formulates his own problems, thus living each experience intensely, strengthening meaningful learning.
Self-initiated learning that involves the learner as a whole - feeling and intellect will tend to be more lasting and comprehensive	When the student gets fully involved, learning becomes more effective. The student comes to realize mastery over learning and does not require appealing to any authority that agrees with his judgment.
Independence, creativity and self-confidence are all facilitated when self-criticism and self-evaluation are basic and others' evaluation is secondary	Creativity is unveiled in less critical environments. External evaluation is fruitless when the purpose is creative work. The student should be able to reflect on his own failings by assessing the consequences of his judgments and choices. Self-criticism and self-assessment are key to helping the student be independent, creative and self-confident.
The most socially useful learning is that of the learning process itself, allowing the student to incorporate the process of change	In a dynamic world that changes every moment, the student must learn to learn, and the process of the search for learning is very useful, that is, the walk teaches, not the result itself.

Table 3 Facilitating learning as an objective of education.

Source: adapted from Rogers (1969 apud Moreira, 1999).

To understand learning, Moreira (1999) mentions 3 general types, namely:

a) Cognitive: It is the organized storage of information in the mind of the learner;

b) Affective: It is based on the internal signals to the individual that mark feelings such as satisfaction or frustration at an experience;

c) Psychomotor: involves the muscular responses produced from the training and practice of a physical exercise.

It is noteworthy that there are other theoretical approaches to learning, such as those employed in science teaching, the best known being Behaviorism - Skinner, Piaget, Bruner, Vygotsky, Vergnaud, Ausubel and Johnson-Laird, as well as Rogers Humanist (apud Moreira, 1999) presented in Table 3, offering the dimension of complexity involved.

3 I METHOD

The path used for data collection and elaboration was based on the literature review, covering all types of media, books, websites and scientific papers. It is characterized as an exploratory research, since it is not known whether the proposition of the strategy for obtaining information will meet the objectives. The qualitative and quantitative approach allowed for a more in-depth analysis of the indicators raised. In none of the interviews, people (faculty and students) and their university affiliations will be identified (Figure 1).

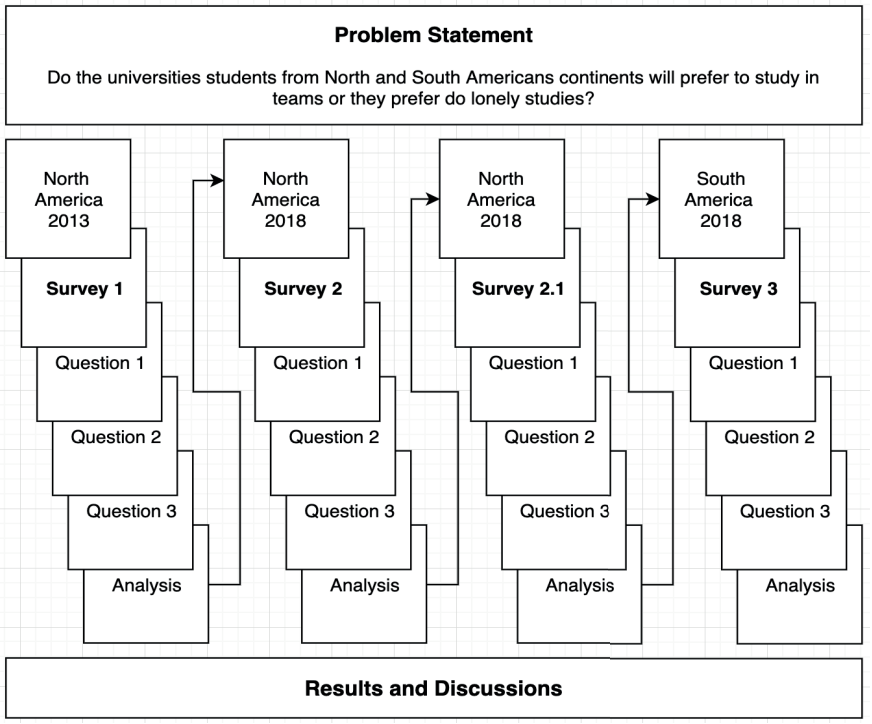

Figure 1 Research Hypothesis.

Source: authors (2020).

4 I MATERIALS AND TECHNIQUES

The surveys used a Survey-type questionnaire, covering open and closed questions, which were sent to those responsible for the university courses, so that they could redirect to the respondents. It is important to highlight that in the all cases described here, the questionnaire was sent in advance for the evaluation of those responsible, being adjusted as appropriate. The third phase was addressed by Google Forms directly to students since the database was available to researchers, unlike previous cases (Tables 4 to 6).

Surveys	Observations
1	Had different class Teachers and Teacher Assistants (TA) support.
2	Had only one class Teacher and one TA support.

2.1	Was composed by North Americans (58.6%), Asians (13.8%), and South Americans (27.6%) participants, it was an University Extension (EC) summer course.
3	Attended 5 different classes of Industrial Engineering at South America.

Table 4 Surveys particularities.

Source: authors (2020).

Surveys	When month/ year	Where/ Continent	Undergrad/Area	*n*= 100%	Respondents/ *n*= %
1	Nov./2013	North America	General, including Engineering	880	175/19.89
2	Aug./2018	North America	Engineering	51	31/60.7
2.1	Aug./2018	North America	Engineering	51	29/56.8
3	Dec./2018	South America	Engineering	130	14/10.7

Table 5 Facilitating learning as an objective of education.

Source: authors (2020).

Questionnaire Presentation
Hi University Name students: I'm doing post-doctoral research on education at my home university in Brazil and I would like to learn more about the summer classes adopted at University Name. I would be very appreciative if you would answer the following questions, especially because your time is so valuable. Thank you. Research Name Research e-mail Post-doctoral Affiliated Institutions Country

Table 6 Only in the third Survey the presentation was made in Portuguese language.

Source: authors (2013-2019).

The questionnaire consisted of 3 questions; the estimated time to answer them was 8 minutes. The questions merged closed and open types. The survey was not concerned with identifying gender and age of respondents, as well as teachers, the latter were not the target of the questionnaires.

5 I ANALYSIS AND DISCUSSION

The analysis were performed following the same sequence presented, Survey 1, 2, 2.1 and 3. The quantitative indicators and the manifestations (voices) obtained through the open questions will be considered (Tables 7-9).

5.1 Survey 1 - Question 1

Item	Questions	Types Open/Closed	Observations
1	Do you like working in groups in your TEAL* class? If you would like to explain in more detail please respond here	O/C	79 students answered only the closed question and 96 answered both questions. 38 said they didn't like working in teams (21.7% n = 175)
2	I learn best when. Options: I study with my fellow classmates; I study alone; I go to tutoring sessions; I listen to lectures; I use other resources;	C	2 students did not answer this question (1.1% n = 175)
3	Do you think your approach to learning has changed now that you have been at university name?	O	40 students did not answer this question (22.8% n = 175)

Table 7 in Survey 1, 121 of the respondents (n = 175) did not answer at least one of the questions.

Source: authors (2019) *TEAL means Technology Enabled Active Learning, coined by Belcher (2001).

5.1.1 Question 1. n = 175, 78.3%

1	… but it's stressful when you don't do well…
2	I can learn from the instructor, my co-workers and my classmates… instead of having to wait or struggle to figure things out on my own.
3	It can be frustrating at times, but physics is hard to learn from lecture only and is much more constructive when you have to go through the problem solving process out loud with a group.
4	… because it gives us all a chance to exchange ideas with each other instead of getting stuck in a problem.
5	… collaborative problem solving is very helpful in solidifying the concepts we learn in class.
6	… forces me to apply learned concepts immediately and helps to identify my problem areas.
7	It takes me a little longer than the rest of my group to understand new concepts.
8	Working with others (especially if you choose them, or at least get along with them) allows you to communicate meaningfully and learn from your colleagues. The other day, actually, my teacher said something like, "You can see someone playing the piano for hours, days, even years, but until you sit down and put your fingers on the keys, you'll never learn to play that piano." I find it much easier to learn the material when we have problems with our groups in the classroom boards, rather than just watching a teacher do them.
9	Working in groups is less desirable when no one in the group really knows how to solve problems. Also, I'm very socially awkward, so finding a group is sometimes quite difficult.
10	I like working in groups, but it's very much influenced by the fact that I have friends in the class, if I didn't do it would be a different story. However, my TA always makes us go to the board, although there is not enough space or markers for each group and she is very rude (her name is (…).
11	Makes 2 hour classes more bearable. Group problem solving breaks the monotony of just listening to a lecture.
12	Many times my classmates can explain concepts to me in a way that the teacher cannot because my classmates are at a similar level of learning to mine and can convey information more clearly than the teacher because they can use simpler language. I was a ski instructor for 6 years and I saw young children doing this all the time with each other in my classes.

Table 8 Respondents comments (voices) answered – Yes

Source: authors (2019).

5.1.2 Question 1. n = 175, 21.7%

1	Group work is why attendance is compulsory, but I don't learn well from the lecture, so half of my time spent is wasted.
2	The best students spend all the time waiting for the slower students, who only get frustrated because they are not as good as the group members.
3	I personally learn best if I solve the problems on my own and then if I have difficulties I would go to other students who have solved the problems. … Especially when students in the group work at different speeds. I usually end up seeing someone working on the problem (fast worker), after finishing (average worker), and talking about the problem with the third person in my group (slow worker). Sometimes I am fast, sometimes I am slow, but the result is that the group part of the problem is ineffective.
4	I feel I don't learn the basic facts and equations of physics .... Stronger members of the group tend to take control so we can get things over with faster and sit down.
5	I work well in groups doing homework but not in class.
6	It is very disturbing and I am not productive during class. I learn well in groups - only not through TEAL. I believe a traditional lecture is much more beneficial to me. Tutoring sessions and the presence of ATs are definitely very useful.
7	You never want to be that person who keeps your team stuck in a concept, or to be thought of as "that stupid person in our group." At least in that format, you are not dragging your team down, or decreasing the number of people.
8	A good group helps you - but a bad group kills your self-confidence and blocks learning. For social reasons it can be difficult to switch groups.
9	I hate TEAL

Table 9 Respondents comments (voices) answered – No

Source: authors (2019).

5.1.3 Analysis - Survey 1

The favorable answers (**yes**) were justified by the fact that teamwork increases the chance of understanding, since the explanation is simpler and coming from someone in a similar learning process. But there are also difficulties, such as not knowing colleagues, or personal barriers to social relationships. Some say they prefer to work in teams but under certain specific conditions, such as the classroom and others in activities outside the academic environment. As for the answers (**not**) said that teamwork is a personal difficulty of their own, or the more able students have to wait for the less prepared to reach understanding, that is, there is a gap between better prepared students and lower performers. Others believe that traditional lecture classes are better compared to teamwork. The feeling of guilt also arises, especially when you realize that the other students who have completed it are waiting for you. Some reported not having sufficient knowledge yet and are asked to address certain content. There are still those who are radically opposed, preferring classes in discursive form / lecture.

Observing the answers related to -Survey 1, positive reports were identified, however, in the comments field some respondents suggested some restrictions. For those who said they disliked group work, there were certain advantages to working in this way. Anyway, we can say that most of the respondents universe (78.3%) adheres to the team work

model. Team and group[1] are pointed as synonyms, because they indicate that a group of people, two or more, gathered to perform the same task or action (PRIBERAM, 2019).

5.2 Survey 1 - Question 2

The results showed a great similarity in the options to study alone (item 1) and with classmates (item 4), the difference was three percentage points, with more advantage for item 1 (Table 7). The third preference indicated by the respondents was to study with the tutors (item 2). Mentoring in this institution was performed by postgraduate students or undergraduates of more advanced grades of the course. If we consider the grouping of answers items 2 and 4 we realize a preference for studying with another person or people. However, attending classes with tutors can be understood as forming a team or not. According to the definitions found, team[1] means to group people with the same objective. Asking the TA what their goals are they will teach or facilitate the understanding of a certain content, however, questioning the student the goal will be to understand the contents, without commitment to assist the TA in this task. Observing in this context the grouping of people is a fact, but it does not mean that a team was formed, since their goals differ.

"Teamwork is a work system developed by a group of people, where everyone is dedicated to the accomplishment of a task, and usually one of the participants takes the lead." (Significados, 2014).

In Survey 1 - Question 2 (Table 10) studying in a team with someone who has knowledge superior to yours brought opposing visions, as being advantageous, as it allows learning and advancing faster or, in opposition, arousing the feeling of incapacity of those who have difficulty following solving a given problem compared to the one that can more quickly solve the same issue. Thus, a discussion opens, team learning favors learning or grouping between people, in the face of a problem, brings advantages if one of the participants has the responsibility to teach their own group, as is the case with AT? One of the complaints raised by those who do not believe in team learning is that there is some competition between those who know and those who still need to know a subject.

Item	Survey 1 - Question 2 - Options	%
1	I study alone.	52
2	I go to tutoring sessions.	40
3	I listen to lectures.	25
4	I study with my fellow classmates.	49
5	I use other resources.	6

Table 10 Comments (voices) and Analysis Survey 1, Question 2

Source: authors (2019)

1. Team, group or team appear as Synonyms. Available at: <https://www.sinonimos.com.br/time/>. Accessed on: Jan 20. 2019. The term Team in English has the same meaning and application as "used in a number of phrases that refer to people working together as a group in order to achieve something" Available at: <https://dictionary.cambridge.org/ dictionary / english / team>. Accessed on: Jan 20. 2019.

5.3 Survey 1 - Question 3

As for Question 3, it was noticed that 105 people indicated changes in their way of studying after starting university. The remaining respondents were divided into: 37 people did not respond, those who said there were 23 people and those who said they had doubts represented by the smallest 10 people.

It is noteworthy that those who said Yes, that is, there were changes, suggested evolution in the study model, or who began to study more, either with colleagues or alone. Some compared high school studies, which were concerned with decorating content and the new reality that requires understanding the content. One of the respondents confirms by saying “Yes. The material is more difficult, so I have to ask for help much more...” or “Yes! I was usually the person explaining everything and now I have to ask and make sure I’m understanding.” Other justifications went through the quantification of students attended “Yes, in high school, our class was about twenty people, so it was very discussion-oriented. Now, students need to take initiative to learn instead of feeling the need to please a teacher.”

For those who answered **No**, the respondent’s statement “[...] I keep studying alone, classes serve to clarify my doubts [...]”, that is, he considers the classes as a review of what he learned in his own. readings. One-third of respondents who said No failed to give reasons for denying change. For some, the change seems to have been punctual, as can be seen here: I still do homework on my own but check with others, attend lectures but go to office hours or read the textbook if I have trouble, and ask friends for help sometimes too.” Some students show that they have established very thoughtful learning routines, such as respondent # 19:

No, not really. My approach has for a long time been to get the concepts and ideas from the lectures, find the work strategies in the textbook or worksheets, and hope that the psets give me enough time to practice and really understand. I rarely do practice exercises except for final exams. If I don’t know how to do something, I usually ask for help or try to look it up somewhere.

As for the respondents who raised doubts about the existence of change in learning, it is worth mentioning one of the comments “I’m a sophomore, I don’t remember how I studied before the university[2].” This behavior may be linked to the lack of interest in the university. Since he is a veteran and is probably about to complete the course, the university may no longer focus on his priorities. Another example can be seen in this statement: “Not really. At My University[3], I don’t go to classes where attendance isn’t required, but I don’t think going to my high school classes was really part of my “approach to learning.” Some respondents took advantage of the space and commented on the question. which indicated a certain interest in collaborating in more detail with the research, including

2. The term university replaced the identification of affiliation, preserving the institution as requested by the mediator.

leaving contact.

The audience was heterogeneous, made up of native Americans and exchange students. In this Survey no information regarding gender or age was investigated. At the end of one of the Mediator Professor's classes, he expressed his concern about the evaluation of contents that should be carried out the following week, confiding his concern about the performance of a particular class, since the results so far did not indicate success in the future exam. Thus, the Professor decided to summon the AT team, requesting that they go to the student dormitories on the weekend prior to the test to help with their studies. In the end, he reinforced his attitude in providing students with all the support the university could offer, reporting that a student at that university could not fail without all efforts being made.

5.4 Survey 2 - Question 1

Survey 2 took place at another North American university from July to October 2018 with the Production Engineering (EP) undergraduate class. Like Survey 1, it was not the purpose of the survey to identify gender and age of students. The class has 51 students, of which only 31 (60.8%) answered the questions sent (Table 11 to 13).

Item	Questions	Types Open/Closed	Observations
1	Do you like working in groups in your TEAL class? If you would like to explain in more detail please respond here	O/C	6 students said they didn't like working on teams (19.4% n = 31)
2	I learn best when. Options: I study with my fellow classmates; I study alone; I go to tutoring sessions; I listen to lectures; I use other resources;	C	45.2% of respondents said they prefer to study alone, 25.8% prefer to attend classes / lectures. The remaining 29% students said they prefer to study with peers and attend meetings with tutors (29% n = 31).
3	Do you think your approach to learning has changed now that you have been at university name?	O	77.4% of students believe that they changed their study format the remaining 24 respondents (22.8% n = 31) said the study model did not change.

Table 11 in Survey 2, 25 respondents (n = 31) responded that they like to work in teams.

Source: Authors (2019).

5.4.1 Question 1. n = 31, 80,7%

1	…This allows for many different opinions so the correct answer can often be reached through common sense…
2	I like the feeling of the responsibility of taking charge and being part of a group.
3	Inside the class, yes…
4	…By working in groups, more possible solution can be created and reasonably evaluated.

5	…I enjoy working in groups when everyone puts in work to complete the assignment, and there is a way to evaluate teammates throughout the assignment.

Table 12 Respondents comments (voices) answered – Yes:

Source: Authors (2019).

5.4.2 Question 1. n = 31, 19,4%

1	While I know it is good to improve working as a team I prefer not to.
2	Yes and no, it all depends on the people you are working with
3	Depending on the assignment, it can be beneficial.
4	In groups work is never distributed evenly. I always feel I'm doing too much or not enough.
5	… I usually want to do it my way. So, when others do the assignment a different way, I don't usually like that.

Table 13 Respondents comments (voices) answered – No:

Source: Authors (2019).

5.4.3 Survey 2 - Question 2

Indicators pointed out to study alone (45.2%) similar to the result found in Survey 1 (Question 2), however the second most preferred way of studying was in Survey 2 how to attend the lectures / classes (25.8%) (Table 14). Classroom attendance is mandatory at this university[3], unlike the Survey 1 participating university, it may be that the difference in academic rules influences the preference for attending classes. Thirdly, it appeared - studying with colleagues (16.1%) and finally studying with tutors (12.9%). The other features option did not get any percentage points.

Item	Survey 2 - Question 2 - Options	%
1	I study alone.	45,2
2	I go to tutoring sessions.	12,9
3	I listen to lectures.	25,8
4	I study with my fellow classmates.	16,1
5	I use other resources.	0

Table 14 Comments (voices) and Analysis Survey 2, Question 2.

Source: Authors (2019).

5.4.4 Survey 2 - Question 3

As for Question 3, it was noticed that 77.4% (n = 31) indicated that there was a perception of change regarding the approach of their studies. The remaining 22.6% indicated

3. The term university replaced the identification of affiliation, preserving the institution as requested by the mediator.

that they did not notice changes. For those who said Yes, the comments reveal situations similar to those found in Survey 1, such as: “I have improved my study habits greatly.” Other statements highlight the need for change when compared to past high school habits, such as “[...] I need to learn how to study.” Or “I devote more time to studying now.” Some students offer strategies on how to study at university, for example, “Concentrate more in class, from less review later.” Atypical answers have emerged bringing new opportunities for reflection such as content.” The contemporary student seems to be committed to walking and less to fate. Placement helps you think about how classes should be organized in such a way as to offer learning experiences.

For the negative answers there are also a variety of possibilities, one of which indicated that “In the sense that I am still primarily studying alone, [...].” However, following the respondent himself said “[...] but my university has encouraged me to seek more outside resources and online help.” One of the respondents compared his way of studying at a North American university to that practiced at the university in Germany. This respondent reported maintaining, in both universities, the same learning model, nothing was changed by the student, even changing country.

5.5 Analysis - Survey 2

The favorable justifications (yes) had as appeal the reduction of the work to be done, since it allows to divide the tasks between the components. The variety of possibilities raised by the team members, enriching the discussions and consequently the result. For respondents who indicated (not) perception pointed to the choice of components, ie if you cannot choose who to work with, it is preferable to work alone, but if it is possible to choose team members, activity in teams may be helpful. There is a perception that working in groups you often take on more activities, because there are those who do not collaborate, leaving it to others. There is also the view of those who consider that individual work requires no discussion, that is, what one decides will not be challenged.

Observing the answers related to -Survey 2, it was noticed that mostly teamwork in the classroom was 80.6% (n = 31) as preferential. There are also, in the complementary answers to Question 1, the idea that the existence of teams collaborates in the promotion of a friendlier environment, as it brings together people who have not had the opportunity to know each other. This aspect is interesting if we consider the socio-technical organization of the academic environment as preparation for future professional activity. For some respondents, some subjects are more appropriate than others for applying group activity. There was no detail, so it is not possible to identify the type of discipline whose student understood to be most appropriate to work in teams.

5.6 Survey 2.1 - Question 1

Survey 2.1 also took place at the same university as Survey 2 from July to October

2018 with the Extension Course class (2018). This course takes place annually and the students come from different countries and are motivated by the dynamics adopted by the course organizers develop activities in teams within partner companies of the Production Engineering department. In CE (2018), the teams were purposely organized by students from different countries, so a team could have North and South American students, including Asian as well the practiced model takes the experience of working in teams to a more complex level, involving cultural and linguistic differences. Like Survey 2, it was not the objective of the research to identify gender and age of students. Survey 2.1 had n = 51 students, of these 29 (56.8%) answered the questions sent (Tables 15 to 16).

Item	Questions	Types Open/ Closed	Observations
1	Do you like working in groups in your TEAL class? If you would like to explain in more detail please respond here	O/C	Table 9 in Survey 2.1 100% of respondents (n = 29) responded that they like to work in teams.
2	I learn best when. Options: I study with my fellow classmates; I study alone; I go to tutoring sessions; I listen to lectures; I use other resources;	C	45.2% of respondents said they prefer to study alone, 25.8% prefer to attend classes / lectures. The remaining 29% students said they prefer to study with peers and attend meetings with tutors (29% n = 31).
3	Do you think your approach to learning has changed now that you have been at university name?	O	77.4% of students believe that they changed their study format the remaining 24 respondents (22.8% n = 31) said the study model did not change.

Table 15 in Survey 2.1 100% of respondents (n = 29) responded that they like to work in teams.

Source: Authors (2019).

5.6.1 Question 1. n = 29, 100%

1	Specially working in projects in groups.
2	Really team work experience.
3	Working in groups, when the group is good, provides room for discussion and construction of new ideas and thoughts.
4	Because I learned a lot from the teammates from other countries.
5	Even if working in groups is difficult, we learn about engage and deal with people. It is even more interesting in my university because we work with different nationalities and cultures.

Table 16 Respondents comments (voices) answered – Yes:

Source: Authors (2019).

None of the respondents from Survey 2.1 choose No as an option to Question 1, n = 29, 0%.

5.7 Survey 2.1 - Question 2

The item with the highest preference was number 4 (study with classmates), chosen by 27.6% of respondents (Table 17). The indicators pointed to similar results for items 2 and 3 (studying with tutors and attending classes), together totaling 48.2% of preferences. The two least preferred items were 1 and 5, respectively studying alone with 17.2% and using other resources with 6.9%.

Item	Survey 2.1 - Question 2 - Options	%
1	I study alone.	17,2
2	I go to tutoring sessions.	24,1
3	I listen to lectures.	24,1
4	I study with my fellow classmates.	27,6
5	I use other resources.	6,9

Table 17 Comments (voices) and Analysis Survey 2.1, Question 2.

Source: Authors (2019).

5.8 Survey 2.1 - Question 3

As for Question 3, it was noticed that 82.7% (n = 29) indicated that there was a perception of change in the approach of the studies. The fact that teachers use projects as a strategy aroused interest, as we can see what one of the respondents said: “Yes, learning through projects, simulations and lectures is much better than only lectures.” One respondent said that “Yes, I got a two different way of thinking.” Two respondents highlighted the gain in self-confidence as a significant difference: “Yes, the experience at my university made me gain confidence in myself.” To another respondent the committed manner of the teachers involved made all the difference, how can be seen: “Yes, I do! Because in my university the teachers really care about the knowledge that they are teaching and this is very inspiring. In addition, the same respondent strengthened the concept of how he learns better by pointing out that he was more motivated to participate in the classes, a topic discussed at Survey. 2.1 Question 3. Another respondent suggests that before taking the extension course he himself showed no interest in group study and after his experience at the American university this was changed, “Yes, now I like to work in group better.” One of respondents also responded positively to the change, however, I consider their explanation to be one of the most significant, as there was a paradigm shift from what really matters, their response distinguishes the focus on people, as we can see below, “Yes, now I actually think The rest of the respondents were divided as follows: 6.9% thought there were no changes and the same percentage number represents the participants who have not answered this question.

5.9 Analysis Survey 2.1

The favorable justifications (yes) basically agreed that group work is preferred, however, for some reason for being favorable is justified by the possibility of increasing the number of ideas. However, we also took into account the quality of the participating group members, ie if the team is competent all is well. For one of the respondents even though working in groups is not easy, he pointed out that there are advantages in this modality, as one learns to negotiate and collaborate with team members. He also added that the experience at the American university was enriching because the teams had different cultures and nationalities. The perception of 2 respondents, out of the 5 who made comments, was considered positive because the team is made up of people from different countries.

Observing the answers related to -Survey 2.1, it was noticed that totally the teamwork in the classroom was 100% preferred (n = 29). There is also, in the complementary answers to Question 1, the idea that teams made up of members of different nationalities seemed appealing. Another aspect to highlight was the comment about the experience of seeking a balance between opinions and the productive management of teams, seeking the best answer. That is, learning to manage or lead a team appeared as a positive aspect of working in groups. It is worth noting that the students did not know that they would be organized in teams composed of people of different nationalities. In addition, because it is an extension course, there is a different climate that involves the students. In Survey 1 this did not happen, there were foreigners in the class, but the course was regular and so the experience of working across different cultures may not have drawn attention. It is also possible that for Survey 1 students it is more common to live with foreigners on the teams and is therefore not relevant in their observations. Survey 2.1 may raise questions about whether the result was 100%, however, at least 5 of the respondents pondered how favorable they are to teams.

6 I SURVEY 3 - QUESTION 1

Survey 3 took place at South American public state university in December 2018. The students selected were graduates of the Ergonomics subject and belonged to the Production Engineering classes, as well as students with an emphasis in Chemistry and Mechanics. Participating years and semesters were: 2016 (1st sem., n = 33 and 2nd sem., n = 30); 2017 (1st sem., n = 31) The classes 2017, 2nd sem. and 2018 1st sem., for academic administration reasons, simultaneously performed the discipline, making a universe of n = 39. Therefore, the invited universe totaled n = 133, of these only 10.5% n = 14 effectively participated in answering the questions. Tables 18 and 19 presents the total results, ie n = 14, considering the sum of all respondent classes (2016_1 and 2; 2017_1;

2017_2 and 2018_1).

Item	Questions	Types Open/ Closed	2016_1	2016_2	2017_1	2017_2 and 2018_1	Total n=14
1	Do you like working in groups in your TEAL class? If you would like to explain in more detail please respond here	O/C	Without return 0%	100% (n=4) they say yes	100% (n=4) they say yes	100% (n=6) They say yes	100% (n=14) of participants answered both questions.
2	I learn best when. Options: I study with my fellow classmates; I study alone; I go to tutoring sessions; I listen to lectures; I use other resources;	C		75% prefer to study with classmates and 25% attend classes	0% prefer tutorials, 25% attend classes and 25% study with colleagues	50% attend classes, 33.3% study with colleagues and 16.7% study alone	6 students prefer to study with classmates (43%). 5 respondents chose to attend classes, 2 students prefer tutoring and 1 student study alone (n = 14)
3	Do you think your approach to learning has changed now that you have been at University Name?	O		100% they say yes (n=4)	100% they say yes (n=4)	83,3% they say yes and 16,7% they say no (n=6)	13 students said they changed the way they study after university entrance and 1 considered that there was no change

Table 18 in Survey 3, 10.5% of respondents (n = 14) answered that they like to work in teams.

Source: Authors (2019).

6.1 Question 1. n = 14, 100%

1	Teamwork is always more productive.
2	In addition to making classes more dynamic, it is important for us students to learn to work in teams.
3	Working in a group helps to gain another insight into the problem we can learn from others and teach.
4	Working in a group it is possible to hear different opinions and thus have a better understanding of the subject.
5	I study weekly and don't let the matter accumulate.
6	The study routine became much more intense, especially during the test weeks.
7	Learned to optimize to make the most of my study time.
8	Classes do not prepare as they should. With that, I need more dedication at home.
9	Find interesting group work to improve interpersonal relationships.
10	Exchange of ideas, dynamism of the subject, communication in colloquial language.
11	I learn a lot from classmates, we debate, we exchange opinions, until we find the answer.
12	Yes. I think it is important to interact with classmates to know how to deal with their differences in thinking, as it is a learning alternative.
13	Working in a group develops skills that are important to personal and professional life.
14	Sharing knowledge is very good!

Table 19 Respondents comments (voices) answered – Yes.

Source: Authors (2019).

None of the respondents from Survey 3 choose No as an option to Question 1, n = 14, 0%.

6.2 Survey 3 - Question 2

Item 4 had the highest preference (study with classmates), chosen by 43% of respondents. The second preference given refers to taking classes with tutors. Studying alone comes with 7.1% of preferences, and was indicated by only one student (Table 20). The number of items without any percentage was double the results found in previous surveys, in this case were items 3 and 5, so far, only item 5 had been neglected. The result seems to find support in one of the opinions when the fourth Survey respondent 2017_1 said, “Lessons don’t prepare as they should. As a result, I need more dedication at home.” From this we can argue that the outstanding autonomy perceived as one of the characteristics is related to the pedagogical model or the teachers’ lack of interest in activities.

Item	Survey 3 - Question 2 - Options	%
1	I study alone.	7,1
2	I go to tutoring sessions.	14,3
3	I listen to lectures.	0
4	I study with my fellow classmates.	43
5	I use other resources.	0

Table 20 Comments (voices) and Analysis Survey 3, Question 2.

Source: Authors (2019).

6.3 Survey 3 - Question 3

In Question 3, 83.3% (13 respondents) indicated that changes occurred in the way they studied after entering university. For 21.4% (n = 7) of respondents the optimization of the studies appeared as justification in the three Surveys (2016_2, 2017_1 and 2017_ 2 and 2018_1). In this same context, the need to establish a routine was also presented as justification. Respondents highlighted the perceived differences between school routines and the university, stating that at the university there was a significant increase in content. Another aspect mentioned was in relation to the “Little time to study...”. The absence of time can be understood since the course to which the respondents belong, depending on its emphasis and period, has times in which students can do internships or even become effective in a company, thus, they feel if overloaded. In Survey 2017_1 one of the respondents says, “Classes don’t prepare as they should. With that, I need more dedication at home. ”This justification is similar to the statement made by a Survey respondent 2017_2 and 2018_1. theme covered is very important. Once the theory is passed, it would be very cool for colleagues to debate together. Then the teacher would verbally answer the right

questions or not!" Both justifications call for the importance of the teacher's involvement in the teaching-learning process, regardless of whether the students demonstrate the ability to manage their academic life.

Some justifications regarding Question 3, believing that their study strategies have changed, indicated that "Exercising has always made me learn more." "I have more discipline in studying and I use more resources, such as video lessons and books." Comparing to the zero percentage obtained In Questionnaire 3 Question 2, we perceive a conflict, because it does not indicate the existence of other resources, but justifies the use of different resources, including identifying them.

6.4 Analysis Survey 3

The class for period 2016_1 did not answer any of the questions, so the analysis will be only for the classes 2016_2, 2017_1 and 2 and 2018_1. The justifications were for the most part favorable to group work because they brought benefits to the development of the ability to be an empathetic professional future. Others understand that being able to teach is very positive. There are also those who said that classes are not efficient, requiring more time for dedication at home.

Observing the answers related to -Survey 3 Question 1 we can see the lowest percentage of return from the respondents, if we compare Surveys 1, 2 and 2.1, also related to the same Question 1, because only 14 (10, 5%) of 133 students answered the questionnaire. However, the respondents justified all open questions. Survey 3 Question 1 showed a less autonomous profile, only a single person said they preferred to study alone. Even the two people who indicated working with tutors somehow signaled to be with other people, ie forming a group. Most students from the South American state university responded preferring to study in teams. Similarly, 13 respondents said they changed their way of studying after entering university.

7 I RESULTS AND DISCUSSIONS

Throughout the collection of information, in the 3 surveys, it was possible to notice that the respondents were young and presumably composed the generations known as Y and Z, ie, born between 1985 and 2010. Generation Y has in its representatives, according to Schawbel (2014), Robinson (2014), Maldonado (2018) and Beraldo ([Sd]), characteristics of being competitive. Competitiveness, in turn, can be seen from the opinion given in Survey 1, where young people from Generation Y and possibly some from Generation Z said they prefer to study alone (52%) (Table 21). In the same Survey 1, the second favorite item with 49%, said it was of interest to study with classmates. The difference of 3 percentage points seems to suggest a behavioral transition stage, since in Surveys 2, 2.1

and 3 there is a reduction in interest in the individualized study. Still considering Survey 1, the third largest indicator of preference (Going to tutoring sessions) is a form of team study, but as discussed earlier without the intention of one of the members being responsible for teaching the other peers, the task being up to the tutor, clearly defined for this role.

We may think that the tutor enjoys the privilege of being closer or even part of the same generational group. Language, the perception of difficulties, and perhaps the pressure to be correct in the responses can stimulate students' increased interest in tutoring classes. Proximal dialogue with students may suggest more formal teachers an adjustment in the form of discourse. Participating in tutoring classes was the third largest indicator (91%). In all surveys there was a significant reduction in interest in the tutoring model, which allowed us to come up with other points of view such as: loss of interest or confidence in the tutor's work, which may be a one-off issue or that the figure of the tutor tutor was replaced by the immediate contact and support of their classmates (135%) (Table 21).

It is important to highlight that Generation Z appeared to be more collaborative and technically secure (Table 2). One of the negatives, if we can consider this, regarding Generation Z's behavior is that they are considered less faithful, however, fidelity in the classroom can mean attending to everyone without predilection, in fact another characteristic attributed to this generation is to be tolerant of different cultures. Survey 2 occurred at a traditional university in the southern United States[4], which may have been the reason for the lower result compared to other surveys. Survey 2.1, which took place at the same southern institution, was far superior to Survey 2, however, the participating students were from different countries, including the United States.

The fourth option of the interviewees was to attend lectures[5], curiously what seems to be the traditional way of introducing content obtained the second lowest preference with 75% of the votes (Table 21). Certainly, we can imagine that some of the lectures attended by the interviewees may not have been well planned and organized by the teachers. Thus, the perception that lecture is of little importance was more radically expressed in Survey 3, answered by South American State University students, in which none of the participants (0%) considered this the best option to study. Unsurprisingly the disciplines of engineering courses are known for their difficulty, just as many teachers seem to enjoy a certain satisfaction in showing how the content taught is quite complex and why the high number of failures justifies it. This may be one of the reasons why none of the respondents considered attending lectures as a way of learning. It is critical that the teacher master the technique of lecture as well as other methods applied to teaching, since without this knowledge the results may be the worst, and not teaching discourages the student to

4. According to Newport Gallup Institute (2017) the state where the university is located occupies the eleventh position of the most conservative states in the country. This research did not question the origin of the students, so the observation here serves for reflection only.

5. Hale (1964, apud BLIGH, 1998, p. 7) in their research identified that Lecture is understood as: "introducing and opening up a subject" and "provision of framework for reading". Hale found that "the lecture has an essential place and cannot be replaced by reading combined with discussion".

consider the classroom as a partial environment. for learning.

The fifth and least chosen option referred to the use of other resources. Surveys 2 and 3 did not consider this as an option, demonstrated by the total result of disinterest. The low overall result presented by the question may have been caused by the lack of information on what was meant by “other resources”. The question arose only from the general tabulation of all results, because in

Survey 1, the 6% indicator did not draw the researchers’ attention so that they might suggest changes in the question. Only after the execution of all surveys and analysis of the results was it possible to raise doubts. For researchers, other resources can be understood as providing information that is not necessarily in the academic environment, such as classes, lectures or tutorials available in digital and / or print media, or even face-to-face in other environments such as companies or courses. extension. Students are believed to use some alternative means to familiarize themselves with the subject content (Table 20).

The two Survey 2, 2.1 and Survey 3 institutions have similar but also disparate realities. Both are state universities, but only the North American is paid; The number of students of both is in the 30,000 students, however, when we talk about resources and infrastructure there is great advantage for the North American institution. Whereas in both institutions there are minimally adequate infrastructure and resources We can say that the use of other resources may be associated with the lack of guidance on how to obtain knowledge by employing another approach than traditional means.

Item	Options	Survey 1 %	Survey, 2 %	Survey 2.1 %	Survey 3 %	**Totals**
1	I study alone.	52	45	17	7	121
2	I go to tutoring sessions.	40	13	24	14	91
3	I listen to lectures.	25	26	24	0	75
4	I study with my fellow classmates.	49	16	27	43	135
5	I use other resources.	6	0	7	0	13

Table 21 Question 2, comments (voices) and Analysis from all Surveys.

Source: Authors (2019).

The teachers with whom the investigated students probably related during the data collection period (2013-2018) belonged mostly to the two largest groups represented in the periods 2010-2011 to 2016-2017 2017 (Figure 2).

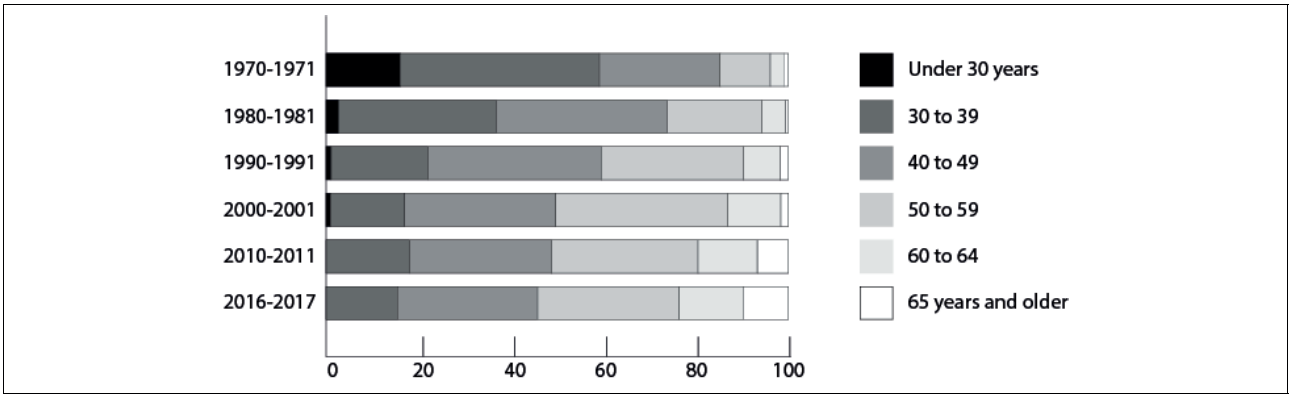

Figure 2 Proportion of full-time university academic teaching staff, by age group and select years.

Source: UCASS/Statistics Canada (apud Shen, 2017).

Based on this assumption, teachers aged 40 to 59 years belong to two generational groups, Baby or Young Boomers and Generation X (Table 2), which have distinct characteristics to groups Y and Z, which represent survey respondents. The main differences refer to the more autonomous behavior of teachers and the volatility naturally faced by students when it comes to maintaining professional status.

Seemiller and Grace (2017) identified that learning process to Z generation, is markedly different from that of previous generations. “Findings from Northeastern University’s Innovation Survey highlight that Generation Z students prefer to engage in hands-on learning opportunities in which they can immediately apply what they learn to real life.” (Seemiller; Grace, 2017, p. 22).

Another aspect that presents itself between generations refers to the use and mastery of technology, since the students enrolled at the university in 2013 belong to the Digital Natives group, those born after 1980 (Prensky, 2001; Palfrey and Gasser, 2008) and teachers belong mostly to the group of Digital Immigrants, those who were born before the digital revolution (Zur and Walker, 2011; Santos; Scarabotto; Matos, 2011). There are several differences between Natives and Digital Immigrants, in Table 22 we can see some of them.

Immigrant Digital	Native Digital
Prefer synchronistic communication, in real time, such as in f2f or phone conversations	Prefer to connect via text, chat, Facebook, online games, etc.
Prefer singular processing and single or limited tasking	Prefer parallel processing, multitasking or task switching
Inclined to read a book from cover to cover	Inclined to read texts in short bursts, one paragraph at a time, hopping to other activities, such as texting or Facebooking, in between paragraphs
See high value in deferred gratification and rewards	Prefer instant gratification and rewards, do not see value in waiting
Hierarchical approach to workplace rather than a democratic or egalitarian one	View the workplace more in egalitarian terms and less in hierarchical (top-down) terms

Learning is a necessity and is often unavoidable drudgery	Learning should be fun and knowledge is often acquired via fun activities, such as gaming, surfing the web or social networking.

Table 22 Immigrant versus Native Digital.

Source: Adapted from Zur and Walker (2019).

8 I FINAL CONSIDERATIONS

The research proved to be useful in understanding some of the most striking aspects about the engineering student and their main ways of learning. Yes, students are interested in learning organized in teams, but this needs to be planned, paying attention to team management, and they

like to work alone at specific times. It also brought to the discussion of generational differences and discussed the approaches adopted by students and teachers. It was noticed that the differences between the generations should be seen as an opportunity for the expansion of the strategies, when exposing theoretical contents.

Regardless of the pedagogical method employed, the most important for the teacher-student relationship is to understand that there are no definitive but transient forms and that this makes the best of each of the time periods. Methods that currently seem to fit the student profile may not be so useful in a short period of time. The speed of the generational layers is increasingly intense and fast, not linked to the formation of family nuclei, but especially behavioral changes. Therefore, it is noticed that all generational taxonomy, as well as being Digital Native or not, encourages us to think in layers, allowing a cross-sectional view of what best suits the current moment. Therefore, it is essential for teachers to know the students' profile and from this, to combine methods and strategies that allow them to offer stimuli capable of causing behavioral changes.

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