TEACHING STRATEGIES BASED ON GENERATIONAL TEACHER COHORTS

Jessica Ramírez, Ginia Montes de Oca, Carmen Caraballo

Dominican Institute for Educational Quality Evaluation and Research, IDEICE, Santo Domingo, Dominican Republic

ABSTRACT

In this study we investigate the teaching strategies used in secondary schools in the Dominican Republic and investigate the preferences each teacher generational cohort have in choosing a particular teaching strategy. We divided the data into 4 generations: baby boomers, generation x, millennials and iGeneration. We also present results based on gender, types of schools and location. Results shows that in the context of the Dominican Republic, there was not a significant difference among the generations. Baby boomers uses more teaching strategies that other generations, especially the traditional ones like questionnaires, debate, and so on.

KEYWORDS

Generational cohorts, Education, Teaching, Secondary school, Dominican Republic, & Learning

1. INTRODUCTION

Teaching strategies is an essential component of the teaching learning process. Teaching strategies are tools, resources used by teacher for facilitate the learning process. This learning process can be active or passive. According to Orlich et al. [1], "Active learning encompasses a wide range of teaching strategies, all of which engage the learner in the actual instruction that takes place. Seat-work is passive. Students working on problems in small groups is active" (p.40).

Teaching strategies have a general application it can be applied in all subject and for all level. The use of those strategies depend on many factors like the investment in tools and resources, etc. We apply generational cohort theory on teachers to describe the teaching strategies used in secondary schools.

The work most closely related to this paper is Romanes & Veniegas [2] which "explores the differences in the 21st century teaching and skills practices among generational groups of teachers." Another work is Bharati **[3]**, which "examines teacher attitudes, teaching strategy lesson preparation, etc."

1.1. Generation Cohort Theory

The concept of generational differences was developed by the Hungarian born sociologist, Karl Mannheim who published his treatise on the "Problem of Generations" in the 1920s **[4]**. The main idea is that each generation are influenced by historical, social events, and people born within the same generation share similar characteristics.

There is not a general consensus regarding the cohort for each generation. In table 1 shows some basic characteristics of each generational cohorts.

Table 1. A comparison of generational cohorts (adapted from [2])

	Baby Boomers	Generation X	Generation Y (Millennials)	Generation Z (iGeneration)
Characteristics	Hardworking, loyal, confident, cynical, competitive	Anti-authority, highly individualistic, self-reliant, family focused	Confident, digital thinkers, sense of entitlement, needy	Realistic, creative, hyper-connected
Why they are the way they are	The wealthiest, healthiest, largest generation of their time. Raised to pursue their dreams	Children of workaholics and divorce; the arrival of cable television and computers. Raised to be self sufficient	Micro-managed by their parents, technology, always rewarded for participating. Raised to be high achievers	Raised in a culture of fear, mobile technology, helicopter parents, social media
Communication styles	Prefer communication personal or via phone	Prefer concise communication and email	Prefer frequent feedback and problem solving via technology	Prefer virtual communication instead of in-person meetings
Problems they are facing now	Retirement, rising health care	Debt, caring for children and aging parents	Debt, unemployment	Lack of job opportunities
Flaws	No always open to new ideas	Have difficulty committing	Short attention spans	Over-confident in their knowledge, lack of interpersonal skills

1.2. Education in the Dominican Republic

The origins of the Dominican Republic education system can be traced back to the American Discovery. Spaniards requires, the native inhabitants of the island to get basic and rudimentary knowledge to facilitate the Evangelization of America process [5].

However, the Formal or school education on the island of Santo Domingo began in 1502. By then the basic curriculum included classes like reading, writing, calculation and Christian doctrine. Already in the period between 1822 and 1844 there were few elementary schools and almost zero coverage of secondary education.

On May 12, 1845, the Organic Law of Public Instruction was promulgated, with which the first public schools called first-letter schools were created. This law provides for the construction of a school in each common or town and two, in each head of province with primary and higher levels. The public education law of 1867 meant the consolidation of the educational system, organized the Dominican educational system for the first time, creating the Superior Board of Studies and established the obligation of the State to promote public education, the sciences and the arts and free primary education.

Nowadays, in the Dominican Republic children are enrolled into preschool from the age of 3 to 6 years The primary schools last for 6 years, then they enrolled into secondary school for 6 years [7].

1.3. Secondary Education

It is the period after the primary level. It last for 6 years divided in two cycles. Each cycle lasts 3 years. It offers general training and options to respond to the aptitudes, interests, vocations and needs of the students, to insert themselves efficiently in the world of work and further studies. It includes the ages of 12 and 18 years. It is made up of two cycles. The first cycle lasts three (3) years and is common to the different modalities. The second cycle of this level has a duration of three (3) years and is developed in the modalities: Academic, Professional Technical and Arts [7].

The main goal of this study is to describe the teaching strategies use in secondary education based on the generational teacher cohort. This paper also examines whether gender, location and types of schools got some impact in the results.

According to New Strategist Press [7], "Differences among generations are too often buried in statistics that look only at the population as a whole." We want to examine if there are any differences in choosing a teaching strategy for instance, between a Baby boomer teacher and a iGeneration teacher.

In this study we use the generational cohorts as described in [5], Baby boomer born 1946 -1964, Generation X born 1965-1976, Millennials born 1977-1994 and iGeneration born 1995-2009.
The rest of the paper is organized as follow. Section 2, explains the methodology. In section 3, we present the results and the final conclusions are presented in Section 4.

2. METHODOLOGY

The research is descriptive and a mixed approach that will measure the strategies used in secondary schools and the frequency with which they are used in the classroom.

2.1. Population and Sample

According to EDUCA [8], in the Dominican Republic educational schools are grouped into 18 educational regions and 122 school districts. 248 schools distributed in the 18 educational regions of the nation were probabilistically selected. A stratified random sampling was used, choosing two teachers per school.

2.2. Data Collection Instrument

To achieve the objectives set, the questionnaire was selected as a measurement instrument, in which Likert scales and dichotomous questions with open answers predominate so that participants can deepen about the strategies used in the teaching-learning process.

The ethical guidelines of the research were followed, the participants gave their consent and participated freely and voluntarily. It should be noted that for this reason in some schools only one teacher participated.

Table 2. Survey Dimensions

Dimensions	Details
Class planning	• Class Goals • Topic Relevance • Daily Tasks
Class introduction	• Prior knowledge assessment • Class summary • Justification and important of the class
Class development and practice	• Teams organizations • Presentations, debates, mind maps • Blackboard • Glossary • Motivation • Questionnaire and comprehensive reading • Analogies • Summary of the topic • Problem solving Learning approach • Synchrony between topic and students capacities
Closing and knowledge evaluation	• Socratic Method • Complementary activities • Oral and written evaluation • Supervision of the daily tasks • Feedback • Decision making based on the evaluation results • Final questions • Clarification of doubts
Technology	• Planning learning experiences and the use of information technologies (ICT)

To measure the strategies used by the teachers, they were segmented into dimensions such as: lesson planning, class introduction, class development and practice, closure and evaluation of learning and use of technology (Table 2).

3. RESULTS

We present results for each generational teacher cohort such as “Baby boomers, Baby boom or BB”, “Generation X or GX”, “Millennials or M” and” iGeneration or iG”. We also present results based on gender, school location, etc.

3.1. Sample Feature

The sample mean is 40.38 years, with a standard deviation of 10.38 with an asymmetry coefficient of 0.20. with a minimum age of 21 years and a maximum age of 75 years. Table 2 shows the summary of descriptive statistics of the sample based on the age variable of the complete sample in column 2 and segmented in columns 3 and 4 based on the gender variable and in columns 5 and 6 based on public and private school.

Table 3. Sample

		Sex		School	
Age		Female	Male	Public	Private
Mean	40.38	41.21	38.57	40.60	40.12
Error	0.47	0.570	0.82	0.57	0.77
Median	40	42	39	41	40
Mode	43	52	43	45	40
Standard Deviation	10.38	10.35	10.30	9.30	11.56
Variance	107.89	107.06	106.04	86.55	133.52
Range	Th54	47	53	45	54
Mín.	21	21	22	22	21
Max.	75	68	75	67	75
Total	489	329	157	265	224

Figure 1 shows the distribution of the sample based on the generational teacher cohorts. Millennials got the 56% of the sample in contrast with Baby boomer, with just the 5% of the sample.

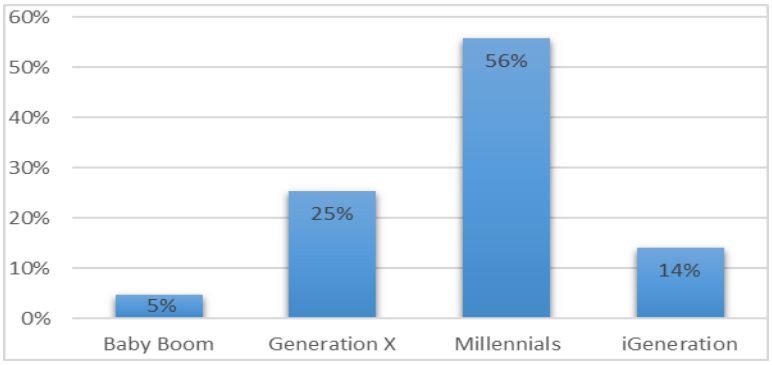

Figure 1. Sample distribution by age generation

The basic descriptive statistics in details for each generational cohort are shown in table 4.

Table 4. Sample

	Generational cohorts			
Age	Baby boomers	Generation X	Millennials	iGeneration
Mean	61.65	51.11	37.60	25.02
Median	60	51	38	25
Mode	58	52	43	26
Standard Deviation	4.36	3.32	5.30	1.60
Variance	19.05	11.04	28.06	2.58
Total	24	124	273	224

Figure 2 ilustrates the gender proportion of the sample. For all generations female outperformed male.

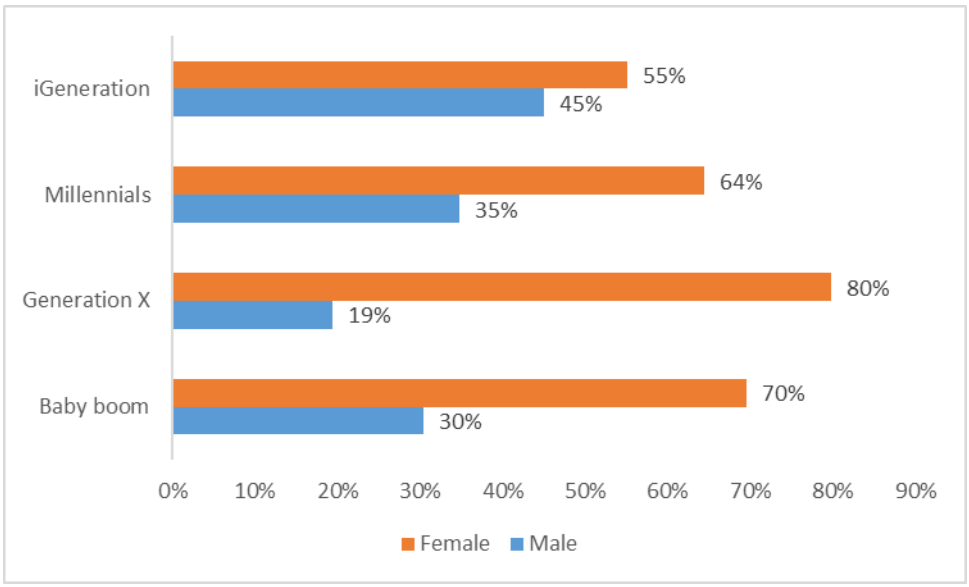

Figure 2. Sex distribution by generation

Figure 3, show the proportion of the gender in both public and private school. Most of the Baby boomers and iGeneration teachers work on private schools, 74% and 67% respectively.

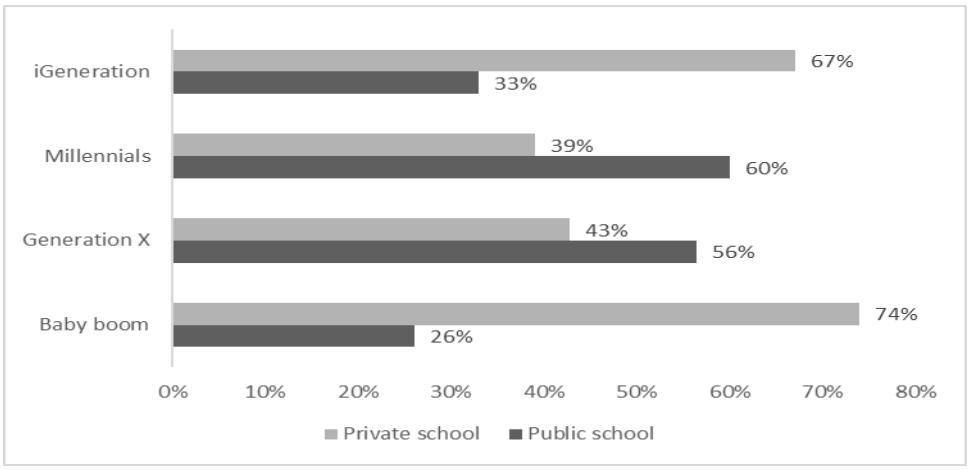

Figure 3. School distribution by generation

There is not a Baby boomer teacher working in a rural school (figure 4), and urban schools have more teachers than rural school, this is because in our sample most of teachers works in the city.

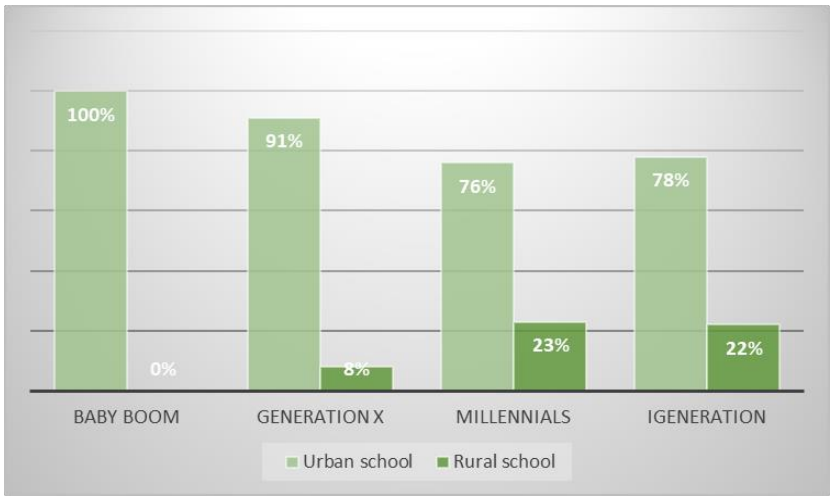

Figure 4. School location by generation

Most of the teacher got a university degree the 85% of the iGeneration got a bachelor degree and the 37% of the Generation X have postgraduate education. (figure 5).

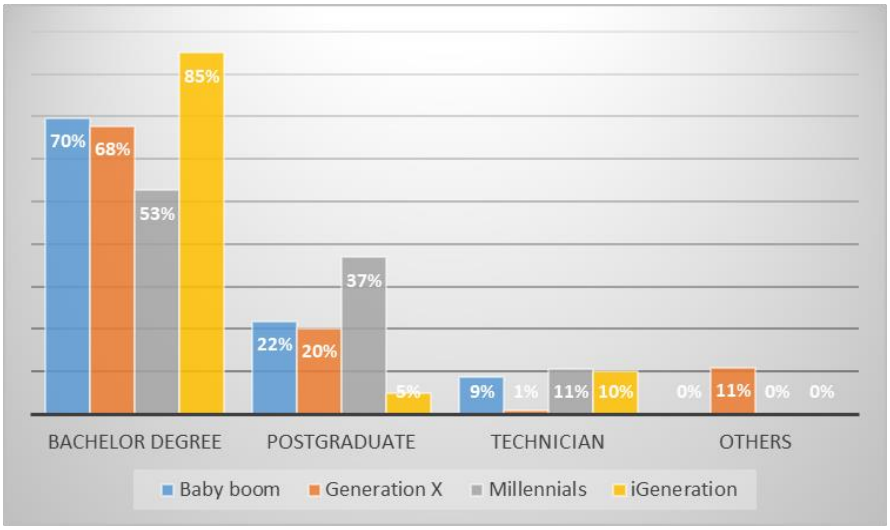

Figure 5. Education

3.2. Pedagogical Strategies

The results of the teaching strategies are presented according to their dimensions and the aspects related to each dimension (see table 2).

3.2.1. Class Planning

Table 5 presents the results for the dimension Class planning the 89% of the Baby boomers that works in the public schools always plan the class, and just 69% of the iGeneration teacher always prepare the class.

Table 5. Class Planning

	GEN	Female	Male	Public	Private	Urban	Rural	General
Always	*BB*	83%	71%	89%	76%	80%	0%	80%
	GX	82%	78%	82%	79%	81%	80%	81%
	M	82%	79%	82%	78%	80%	81%	81%
	iG	68%	70%	70%	69%	69%	71%	**69%**
Frequently	*BB*	13%	24%	11%	18%	16%	0%	16%
	GX	17%	21%	17%	19%	18%	20%	18%
	M	17%	20%	16%	20%	18%	16%	18%
	iG	26%	29%	25%	29%	28%	27%	28%
Sometimes	*BB*	2%	5%	0%	4%	3%	0%	3%
	GX	1%	1%	0%	2%	1%	0%	1%
	M	1%	1%	1%	2%	1%	1%	1%
	iG	4%	1%	6%	1%	3%	2%	3%
Never	*BB*	0%	0%	0%	0%	0%	0%	0%
	GX	0%	0%	0%	0%	0%	0%	0%
	M	0%	0%	0%	0%	0%	0%	0%
	iG	0%	0%	0%	0%	0%	0%	0%

Legend: GEN: generation, BB: baby boomers, GX: generation X, M: millennials and iG: iGeneration.

3.2.2. Class Introduction

For the class introduction, the 85% of Millennials working in a rural school always introduce the class (table 7).

Table 6. Class introduction

	GEN	Female	Male	Public	Private	Urban	Rural	General
Always	*BB*	77%	76%	78%	76%	77%	0%	77%
	GX	77%	74%	79%	72%	76%	80%	76%
	M	82%	77%	82%	79%	79%	85%	80%
	iG	75%	80%	83%	75%	77%	80%	77%
Frequently	*BB*	23%	19%	22%	22%	22%	0%	22%
	GX	21%	18%	18%	23%	20%	17%	20%
	M	17%	21%	17%	19%	19%	14%	18%
	iG	21%	17%	13%	22%	21%	13%	19%
Sometimes	*BB*	0%	5%	0%	2%	1%	0%	1%
	GX	3%	8%	3%	5%	4%	3%	4%
	M	1%	2%	1%	2%	2%	1%	1%
	iG	4%	3%	4%	3%	2%	7%	3%
Never	*BB*	0%	0%	0%	0%	0%	0%	0%
	GX	0%	0%	0%	0%	0%	0%	0%
	M	0%	0%	0%	0%	0%	0%	0%
	iG	0%	0%	0%	0%	0%	0%	0%

3.2.3. Class development and practice

In contrast with the results presented both in table 5 and 6, the mean of the dimension class development and practice the attribute always is less than the 50% for all generations as shown in table 7. For the closing and knowledge evaluation dimension (table 8), the 79% of the iGeneration teachers working in rural schools always evaluate the knowledge of the students. The iGeneration teachers use always the technology (table 9) in the classroom (73%), however, no as we expected and no very distant from the Millennials.

Table 7. Class development and practice

	GEN	Female	Male	Public	Private	Urban	Rural	General
Always	*BB*	44%	40%	46%	41%	43%	0%	43%
	GX	43%	43%	41%	47%	44%	36%	43%
	M	47%	43%	46%	46%	46%	46%	46%
	iG	43%	48%	48%	44%	45%	48%	45%
Frequently	*BB*	37%	37%	33%	38%	37%	0%	37%
	GX	37%	35%	39%	34%	36%	41%	37%
	M	35%	35%	34%	36%	35%	34%	35%
	iG	31%	30%	33%	29%	30%	31%	31%
Sometimes	*BB*	19%	21%	18%	21%	20%	0%	20%
	GX	18%	18%	18%	17%	18%	19%	18%
	M	15%	20%	17%	16%	17%	16%	17%
	iG	21%	18%	15%	22%	20%	18%	19%
Never	*BB*	0%	2%	2%	0%	1%	0%	1%
	GX	1%	1%	1%	1%	1%	2%	1%
	M	1%	2%	1%	1%	1%	1%	1%
	iG	4%	4%	3%	4%	4%	2%	4%

3.2.4. Closing and Knowledge Evaluation

Table 8. Closing and knowledge evaluation

	GEN	Female	Male	Public	Private	Urban	Rural	General
	BB	65%	66%	76%	64%	67%	0%	67%
	GX	64%	64%	65%	67%	66%	67%	66%
Always	*M*	69%	66%	68%	72%	70%	69%	69%
	iG	75%	75%	78%	75%	75%	79%	76%
	BB	28%	29%	20%	30%	27%	0%	27%
Frequently	*GX*	27%	28%	25%	26%	26%	25%	26%
	M	22%	25%	22%	23%	23%	19%	22%
	iG	18%	21%	15%	20%	20%	14%	19%
	BB	7%	5%	5%	6%	6%	0%	6%
Sometimes	*GX*	8%	6%	8%	6%	7%	6%	7%
	M	6%	6%	7%	5%	6%	6%	6%
	iG	3%	3%	4%	3%	3%	4%	3%
	BB	0%	0%	0%	0%	0%	0%	0%
	GX	1%	0%	1%	0%	0%	1%	1%
Never	*M*	1%	2%	2%	0%	1%	3%	1%
	iG	2%	1%	3%	1%	1%	2%	2%

3.2.5. Technology

Table 9. Technology

	GEN	Female	Male	Public	Private	Urban	Rural	General
Always	*BB*	50%	21%	33%	44%	41%	0%	41%
	GX	47%	48%	43%	54%	48%	40%	48%
	M	55%	62%	59%	54%	61%	45%	57%
	iG	61%	56%	65%	55%	55%	73%	59%
Frequently	*BB*	44%	50%	50%	44%	46%	0%	46%
	GX	38%	23%	41%	26%	34%	40%	35%
	M	33%	27%	29%	34%	30%	35%	31%
	iG	22%	32%	20%	30%	31%	13%	27%
Sometimes	*BB*	6%	21%	8%	12%	11%	0%	11%
	GX	14%	25%	14%	18%	15%	20%	16%
	M	12%	9%	11%	12%	9%	17%	11%
	iG	14%	11%	11%	14%	13%	13%	13%
Never	*BB*	0%	7%	8%	0%	2%	0%	2%
	GX	1%	2%	1%	1%	1%	0%	1%
	M	0%	2%	1%	0%	0%	2%	1%
	iG	3%	0%	4%	0%	2%	0%	1%

3.3. Resources Available in the Classroom

We evaluate the resources and tools used in the classroom, the origin of the resource, as well as the frequency of use of the resource or tool. Then we present the general results, expressed in percentages for each generational teacher cohort.

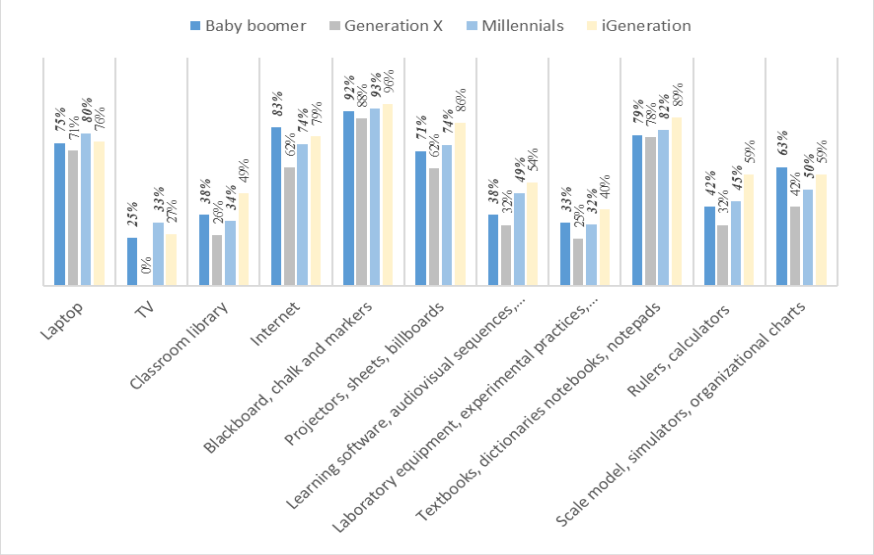

Figure 6. Resources available in the classroom

Figures 6 shows the resources available for each generation group. The 75% of the Baby boomers uses a laptop, the 83% got internet and 92% use the blackboard. The 71% of the Generation X uses a laptop(a), the 62% have access to internet and 88% use the blackboard. The 80% of the

Millennials uses a laptop, the 74% have access to internet and 93% use the blackboard. The 76% of the iGeneration uses a laptop, the 79% have access to internet and 96% use the blackboard

3.4. Platforms

Online platforms and tools use for virtual classes. Those platforms and tools are: Zoom, Skype, Google meet, Teams, Google classroom, Moodle, Blackboard and Edmodo. The 57% of the male baby boomers use Zoom as their primary tool for online class. Skype is not widely use. The 70% of the Generation X teacher who works in a rural use Google Meet.

Table 10. Platforms

	GEN	Female	Male	Public	Private	Urban	Rural	General
Zoom	*BB*	50%	57%	33%	59%	52%	0%	52%
	GX	52%	50%	50%	53%	53%	30%	51%
	M	48%	42%	49%	42%	47%	43%	46%
	iG	50%	45%	30%	57%	52%	33%	48%
Skype	*BB*	6%	29%	17%	12%	13%	0%	13%
	GX	0%	0%	0%	0%	0%	0%	0%
	M	2%	1%	2%	1%	2%	2%	2%
	iG	0%	6%	0%	4%	4%	0%	3%
Google Meet	*BB*	56%	29%	50%	47%	48%	0%	48%
	GX	47%	50%	61%	32%	47%	70%	48%
	M	45%	49%	54%	36%	45%	54%	47%
	iG	29%	35%	43%	26%	28%	47%	32%
Teams	*BB*	38%	14%	17%	35%	30%	0%	30%
	GX	9%	21%	10%	13%	12%	0%	11%
	M	16%	19%	16%	18%	17%	16%	17%
	iG	16%	13%	13%	15%	15%	13%	14%
Google Classroom	*BB*	50%	14%	33%	41%	39%	0%	39%
	GX	48%	63%	59%	43%	51%	60%	52%
	M	56%	56%	58%	52%	59%	46%	55%
	iG	47%	52%	48%	50%	50%	47%	49%
Moodle	*BB*	13%	0%	17%	6%	9%	0%	9%
	GX	8%	13%	3%	17%	10%	0%	9%
	M	15%	17%	15%	17%	19%	5%	15%
	iG	8%	13%	4%	13%	13%	0%	10%
Blackboard	*BB*	0%	14%	0%	6%	4%	0%	4%
	GX	7%	13%	6%	11%	8%	10%	8%
	M	4%	5%	3%	7%	5%	3%	4%
	iG	8%	3%	4%	7%	6%	7%	6%
Edmodo	*BB*	13%	0%	17%	6%	9%	0%	9%
	GX	4%	4%	4%	4%	4%	0%	4%
	M	6%	4%	6%	4%	5%	6%	5%
	iG	5%	10%	4%	9%	7%	7%	7%

4. CONCLUSIONS

Teaching strategies contribute to the development of students' skills. This study was carried out to analyze the use of teaching strategies by teachers at the Secondary level based on the generational teacher cohorts.

Based on the study carried out, it can be concluded that:
Secondary school teachers in the Dominican Republic use different strategies when teaching, the most used always being those belonging to the dimensions of class planning and class introduction. A possible explanation for this would be that both dimensions have only three aspects to deal with compared to the other dimensions which have more than 8 dimensions.

It should be noted that the dimension related to the use of technology is an exception to what was expressed in the previous paragraph, since it only has two aspects. but it could be explained by the fact that some teachers do not have a laptop in the classroom or internet access available. It is clear that this would affect the number of teachers using technology as a strategy.

Teachers who work in the public sector use more strategies than teachers who work in the private sector, with the exception of the closing dimension and evaluation of learning.

An unexpected finding was that the iGeneration teachers uses traditional tools and strategies as the baby boomers. platform most used by teachers is Google Classroom, excepting the Baby boomers that prefers Zoom.

Teachers in schools located in rural areas have access to platforms and tools for online teaching at almost the same level as those located in urban areas. The COVID-19 pandemic speed up the investment in technology in all types of school, public, private in urban and rural area.

In general, teachers employ strategies and use tools to facilitate student learning. We did not find out significant differences amongst the generational teacher cohorts.

In the future, we would like to extend the study to include student perception data to evaluate how effective are those teaching strategies.

REFERENCES

[1] Orlich, D., Harder, R, Trevisan,M. & A. Brown (2017). Teaching Strategies. Cengage Learning.
[2] Romanes, M. & Veniegas, S. (March, 2018). Differences among Generational Groups of Teachers in a Public School District in Their Practice of 21st Century Teaching-Learning Skills. The Asian Conference on Education & International Development 2018.
[3] Bharati, S. (2014). Teaching strategies used by secondary teachers in teaching English as a second language in rural Odisha. International Journal of Science and Research (IJSR). 3(6), 542-543
[4] McKercher, B., Lai, B., Yang, L., & Wang, Y. (2020). Travel by Chinese: a generational cohort perspective. Asia Pacific Journal of Tourism Research, 25(4), 341–354. https://ezproxy.unibe.edu.do:2085/10.1080/10941665.2019.1709877
[5] Ministerio de Educación (2019), Memoria institucional 2019. https://siie.minerd.gob.do/storage/app/uploads/public/5f1/4f1/77c/5f14f177c2ced973744833.pdf
[6] Morrison R. (1993). Historia de la *educación dominicana*. CENAPEC.
[7] New Strategist Press. (2018). American Generations: Who They Are & How They Live: Vol. 9th edition. New Strategist Press, LLC.
[8] EDUCA (julio 2022). Sistema educativo dominicano en números. Info Educativas. 1(1), p.4.

AUTHORS

Jessica Ramírez, She received her M.S. degree from Nara Institute of Science and Technology (NAIST), Japan. She is a researcher at Dominican Institute for Educational Quality Evaluation and Research, IDEICE, She is a professor at Iberoamericana University. Research interests: Natural Language Processing, Education…

Dr. Ginia Montes de Oca is the head of research at Dominican Institute for Educational Quality Evaluation and Research, IDEICE. She earned her BA in Clinical Psychology at Autonomous University of Santo Domingo (UASD). She received her MS in Psychological intervention in Education and a PhD in Quality and Evaluation of Educational institutions, Psychopedagogical Intervention Program in Education, both from The Complutense University of Madrid, Spain.

Dr. Carmen Caraballo, executive director of Dominican Institute for Educational Quality Evaluation and Research, IDEICE. She received her PhD in Educational Leadership from Nova Southeastern University (NSU), USA. She earned her Mg in Education from Santo Domingo Institute of Technology (INTEC) and
a BA in Education from Autonomous University of Santo Domingo (UASD).