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“Teachers’ Assessment Challenges in Online Education”


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Resumen

La educación en línea ha creado nuevas oportunidades para enseñar y aprender; sin embargo, dado que la enseñanza y la evaluación van de la mano, los educadores se enfrentan a desafíos inexplorados cuando evalúan a los estudiantes en entornos virtuales. El objetivo del estudio fue identificar los retos de evaluación que experimentan los profesores de educación superior en la modalidad virtual y cómo éstos se relacionan con sus variables demográficas. Este estudio descriptivo utilizó una entrevista exploratoria en profundidad con seis profesores (tres mujeres y tres hombres) para crear las categorías y preguntas que posteriormente formaron parte de la encuesta. Se seleccionó a un total de 21 participantes mediante muestreo sistemático. Según las conclusiones, la edad de los profesores influyó en los retos que experimentaron. Los encuestados se dividieron en tres grupos: profesores jóvenes, de mediana edad y de edad avanzada. Aunque los educadores estaban de acuerdo y en desacuerdo en diferentes grados según su grupo etario, percibieron los siguientes retos como amenazantes para los principios de fiabilidad, validez y *washback* o efecto colateral de la evaluación de los estudiantes. Entre los retos reportados están los siguientes: a) mayor deshonestidad académica por desconocimiento de protocolos de control; b) bajos índices de asistencia y participación debido a la falta de interacción directa y falta de recursos tecnológicos; c) retroalimentación deficiente debido al mal funcionamiento y la falta de dispositivos tecnológicos, plataformas, herramientas y conexión a Internet; y d) factores externos como la salud de los estudiantes y el entorno de aprendizaje.

Palabras clave: evaluación virtual, principios de evaluación, retos de la evaluación virtual



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Abstract

Online education has created new opportunities to teach and learn; nevertheless, since teaching and assessment go hand in hand, educators face unexplored challenges when they assess students in virtual settings. The study's objective was to identify the assessment challenges that higher education teachers experienced in the virtual modality and how those are related to their demographic variables. This descriptive study used an exploratory in-depth interview with six teachers (i.e., three women and three men) to create the categories and questions that were later included in the survey. A total of 21 participants were selected through systematic sampling. According to the findings, teachers' age influenced the challenges they experienced. The respondents were divided into three groups: young, middle-aged, and aged. Although the educators agree and disagree to different degrees according to their age group, they pointed out some challenges that jeopardized students' assessment reliability, validity, and washback principles. Among the challenges reported are the following: a) higher academic dishonesty due to the lack of knowledge of control protocols; b) low attendance and participation rates due to the lack of direct interaction or digital resources; c) poor feedback due to the malfunctioning and lack of technological devices, platforms, tools, and Internet connection; and d) external factors like students' health and learning environment.

Keywords: online assessment, assessment principles, assessment challenges



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Dedication

To my mom and my aunts Laura, Julia, Sonia, and Mary who have always inspired me to be a good person and who have set the example for being a good professional. To my dad, even though he is not here, I know he loves me very much. To my brother Jefferson, my cousin Evelyn and nieces Naty and Jahni who have always looked up to me and given me strength to do my best. Likewise, I would like to express my deepest gratitude to my friends Jan, Dianu, Kary, and Memo, who have been there for me when I needed them most. You all are the family that I choose. Last but not least, this work is specially dedicated to me for enduring so much during these years and working hard even when I did not have any will or motivation.

Introduction

In order to classify and grade students, provide feedback, and structure their instruction appropriately, assessment is essential to the teaching-learning process (Tosuncuoglu, 2018). Considering the impact of online education in modern-day society, it is important to research the new opportunities that it can bring for assessment as well as the challenges that might emerge with it. Thus, the following research question was formulated: what challenges do teachers face when assessing students in virtual education? For this purpose, the objectives of this descriptive study were to describe and analyze the assessment challenges that educators face during the virtual modality and how they relate to their demographic variables. This study has been divided into five chapters. The first chapter encompasses the background, the problem statement, the rationale, the research question, and the general and specific objectives. The second chapter provides the theoretical framework of key definitions and concepts about assessment. Likewise, the second chapter presents a literature review that outlines the challenges that teachers found when assessing online in three sections: challenges related to teachers' knowledge, resources, and students. The third chapter details the approach, methodology, participants, and data collection instruments used during the study. The fourth chapter contains the presentation and analysis of the results from the survey and the discussion of the findings compared to the literature available. Lastly, the fifth chapter renders the conclusions, recommendations, references, and annexes.

Chapter I

Description of the Research

1.1 Background

Learning and teaching involve a fundamental element: assessment. However, it is essential to make a distinction between assessing and testing. According to the Glossary of Education Reform (2015), assessment is a process made by a variety of methods or tools used by educators to evaluate, measure, and record students' academic preparation, learning progress, skill acquisition, or educational needs. Also, its primary purpose is to make improvements in the required areas. In comparison, testing is defined by the Cambridge Online Dictionary (n.d.) as the action of measuring someone's knowledge through tests. Thus, it is possible to say that assessing and testing cannot be used interchangeably since testing is only one part of the process of assessment.

Traditional assessment lacks the instruments and methods that allow the evaluation of students' communicative performance and linguistic production. Christine (2013) explains how the technological era has changed the concept of "traditional" assessment into the lack of incorporation of ICT tools when assessing. Due to the pandemic, educational institutions were forced to make a transition from an on-site modality to an online learning modality. As a result, along with e-learning education, e-assessment has been introduced to teachers (Bakhmat et al., 2021). Hence, since the use of digital/electronic resources is a must in classes, it raises a new concern about how to assess without risking the reliability and validity of the process. Thus, educators have to get used to new forms of incorporating assessment. In this sense, many teachers see the e-assessment as an opportunity to evaluate more efficiently or interactively, but others may regard it as challenging and unpleasant (Bakhmat et al., 2021). For example, Bakhmat et al. (2021) carried out a survey that showed how teachers adapted to online education and how teaching and assessment experienced a significant transition. The study's findings demonstrated that at the beginning of the pandemic, most instructors had a negative attitude towards e-learning; however, they got used to it, and they had a positive perception of the online context, as it constitutes an opportunity for their educational system in the future.

Unfortunately, according to Abduh (2021), teachers' dissatisfaction with the incorporation of online assessment is related to academic dishonesty not only in exams but also in assignments. In Abduh's (2021) study, the data collected through interviews revealed that teachers needed more time to create an assessment instrument to prevent students from cheating. In the same way, Yilmaz's (2017) study concluded that teachers had the same concern about students' academic dishonesty, yet rather than regarding this situation as an

alarming threat, teachers perceived it as a way to use more creative ways to assess students—especially through the application of alternative assessment tools.

1.2 Problem Statement

Online education was a reality for many developed countries even before the pandemic. To illustrate this, Lenderman (2019) conducted the Inside Higher Ed's 2019 Survey of Faculty Attitudes on Technology for American University Teachers, which showed that forty-four percent (44%) of instructors had taught an online course for more than five years, thirty-four percent (34%) had from 5 to 10 years of experience in online teaching, while twenty-five percent (25%) of educators had taught for more than ten years in an online modality. Even though several countries did not have a substantial incursion in online education, they adapted smoothly during the pandemic. For example, Elfirdoussi et al. (2020) pointed out that for developed countries like Jordan and Saudi Arabia, the transition to an online learning environment, in most cases, was not a problem of resources but a matter of quality, which in developed countries was easily improved with governmental investment and small changes in their educational system.

Concerning Latin America, Ecuador was not different from other countries in online education issues. Ecuador was going through significant educational problems that came with the pandemic, such as (a) lack of connectivity; (b) lack of pedagogical resources for the new reality of virtual education; (c) lack of funding to cover teachers' training programs and salaries; and (d) policies to guarantee all students access to online classes (Ochoa & Solano, 2020). Consequently, the shift into e-learning represented a challenge for educators that then had to adjust their methodologies, techniques, and resources to fulfill the teaching-learning process; that is, a change not only in teaching and learning but also in assessment (Basilaia & Kvavadze, 2020). Thus, conducting this descriptive research was vital to understand the current situation of assessment in online education.

1.3 Rationale

In recent times, with the transition to online classes, educators have become more and more interested in expanding their knowledge about the requirements of assessment procedures in a virtual context. Therefore, the transition to the use of online resources for assessing students required teachers' awareness of a series of basic principles of assessment: authenticity, practicality, reliability, validity, and backwashing. Unfortunately, the lack of experience in assessing virtually still represents a threat to the principles mentioned above and to the whole purpose of assessing students. Additionally, research in assessment in virtual classes is almost non-existent in Ecuador. As a result, it was crucial to carry out this descriptive research study to provide insights into what are the assessment challenges teachers face in online virtual environments.

1.4 Research Question

What challenges do teachers face when assessing students in virtual education?

1.5 Objective

1.5.1 General:

To identify the major challenges teachers face when assessing in a virtual environment

1.5.2 Specific:

- To determine teachers' demographic characteristics
- To describe teachers' major challenges in relation to their demographic features

Chapter II

Theoretical Framework and Literature Review

2.1 Theoretical framework

2.1.1 Assessment

Assessment refers to the methods and tools teachers use to measure, evaluate and document the performance of their students. This is mainly achieved by providing evidence that learning is being promoted through different data points. Assessment can also serve the purpose of certifying the intended outcomes, guaranteeing progress, and improving the dynamic in the teaching-learning process (Archer, 2017). As Brown (1990) stated, assessment is used to determine attributes of individuals or groups of individuals, by gathering and interpreting information related to students' level of accomplishment of learning goals. Similarly, Yambi (2018) pointed out that classroom assessment permits teachers to develop, administer, analyze questions that provide feedback on the effectiveness of instruction, and give students a measure of their progress. Furthermore, Yambi denotes that the process of assessment includes the following components: measuring improvement over time, motivating students to study, evaluating the teaching methods, and ranking the students' capabilities in relation to the whole group evaluation. Hence, assessment is important since it can be used to identify students' weaknesses and strengths so that teachers can provide educational support by displaying assessment and teaching strategies to drive students' learning to a higher level of achievement.

2.1.2 Type of assessment

According to Archer (2017), formative and summative assessments in conjunction with appropriate feedback systems are used to support learning at the different levels of education.

2.1.3 Summative Assessment

Summative assessment is used for grading or determining readiness for progression. This is designed to assess the learners' performance and typically occurs at the end of an educational activity (Caluyua, 2018). The summative assessment predicts not only the extent to which the course learning objectives have been achieved but also reveals the relevance of the assessment design (Zulfiqar, 2020).

2.1.4 Formative Assessment

Formative assessment allows employing data in a diagnostic approach to determine competence, gaps, and progress so learners may adapt their learning strategies and teachers their teaching strategies (Archer, 2017). This type of assessment can be used internally to provide feedback to the learner and analyze elements of the learning process such as curriculum, teachers, and students (Caluyua, 2018).

2.1.5 Principles of assessment

According to Valdez et al. (2017), assessment must be guided by five principles. The first one is reliability which establishes that assessment must reflect the competency to measure a meaningful and worthwhile accomplishment with no interference or bias of any nature. The second one is accuracy which implies that there must be a link between assessment and instruction, so students' learning is assessed depending on the topics they have covered. The third principle is objectivity which explains that the level of competency or proficiency must be the same no matter who is the examiner or the rater. Finally, the last principle is authenticity which refers to the contextualization of the learning outcomes to real-life situations. In Addition to the principles mentioned above, other authors like De Almeida Barbosa and Beserra (2015) considered practicality and backwashing. The former refers to how easy or difficult the assessment data point is to administrate, grade, and interpret. The second one, also known as washback, refers to the negative or positive effects the assessment can have on the teaching and learning process.

2.2 Literature review

While the coronavirus pandemic created a shift in global education, as millions of students abandoned classrooms and engaged in virtual classes in an attempt to contain the spread of the virus around the world, online education was not a recent phenomenon (Morris et. al., 2020). Many studies have addressed teachers' perceptions and experiences of teaching in a virtual environment. Nevertheless, this literature review focused specifically on the implications that online education represents for assessment. This chapter was organized into three sections: assessment challenges related to knowledge of alternative ways to assess, assessment challenges related to resources, and assessment challenges directly related to students.

2.2.1 Assessment Challenges Related to Knowledge of Alternative Ways to Assess

Wibowo and Novitasari (2021) performed a study on the type of assessment conducted in a virtual environment and the teachers' and students' perceptions of it. The results obtained through the questionnaire and the interview revealed that teachers considered that assessing through online platforms was less time-consuming to grade and provide feedback, and it consumed fewer material resources like prints contributing to the practicality principle of assessment. However, the teachers complained about how they struggled to select appropriate assessment strategies and material since the techniques and tools work differently in an online setting. Conversely, Al-Maqbali and Hussain (2022) stated in their study that one of the difficulties that impacted the validity of students' assessment was the struggle of educators to identify strategies that best measure learning outcomes and suit online assessment.

Along the same lines, Husain (2021) conducted research on digital assessment literacy in educators. The data from the survey revealed that experienced teachers (i.e., more than 6 years of service) were knowledgeable about the different types of assessment and their principles, but they often had difficulties finding an appropriate assessment technique or strategy that could suit the online learning context; as a result, instructors often felt that they did not create reliable assessment instruments. Thus, succeeding as a teacher in an online setting might not be an easy task for someone who did not receive special training in the use of different assessing methods and how to recognize the right strategy to promote an effective assessment that provides significant feedback for students, but illiterate online assessment educators could overcome their lack of knowledge through training (Gikandi & Njuguna, 2020). Remmi and Hashin (2021) reported in their study that while educators recognized that online assessment offered a range of tools and techniques that could simplify and make their assessment more interactive, their age often played a key role in how easy or how difficult it was for them to adapt to and incorporate online assessment in their classes. Thus, in the study, most of the younger teachers (i.e., ages 20 to 30) had more knowledge and a better attitude toward online assessment than their counterparts that preferred traditional assessment tools, techniques, and settings due to the challenges that assessing in online environments implied.

According to a study developed by Mariam (2021) about teachers' perceptions of online assessment, educators reported their concern and struggle to create appropriate learning spaces as well as assessment spaces since students' family members interfered in the process; therefore, regular interruptions at home broke the continuity that resulted in faulty evaluation outcomes. Since the teachers were not in contact with students while evaluating them and did not have any knowledge about how to assess online, there were many factors that instructors could not have control over. As a result, the fact that students were in an online environment made it very difficult for teachers to ensure test administration reliability which could have been threatened by noise or interruptions.

In Wu's (2021) study about how instructors conducted teaching in a virtual environment, the educators stated that they spent a considerable amount of time on roll calls and questions about the status of the devices and Internet connection in online classes rather than teaching or interacting with the students. Since this did not occur in face-to-face classes, teachers felt that the quality of e-learning was influenced by their skills to teach and assess online as well as their familiarity with digital platforms, tools, and devices.

Through the studies mentioned previously, it is possible to infer that factors such as the years of experience, the educators' age, and the training received or the lack of this had a direct

influence on the creation and administration of reliable assessment in the online education context.

2.2.2 Assessment Challenges Related to Resources

Khairil and Mokshein (2018) carried out a study about assessing in a virtual education environment. The study showed that teachers had a positive attitude towards assessing online since it allowed them to use resources like “Kahoot” (i.e., a platform in which one can create learning games in a variety of formats) to motivate students to actively participate in the assessment process. Therefore, it is possible to say that some educators might perceive evaluating virtually as a good opportunity to expand the way they assess their students and reduce their workload. Nevertheless, the study also mentioned that to incorporate such tools, teachers struggled to acquire not only a better Internet service but also to look for free platforms since many of the apps had paid subscriptions.

Likewise, Ghanbari and Nowroozi (2021) developed research to find out what were the challenges that the transition from on-site education to online education represented for teachers in higher institutions. Educators reported problems with their electronic devices, poor internet connection, and the necessity to buy gadgets like microphones and webcams to prevent technological problems. Nonetheless, instructors also showed concern about how they had to address the complication of external factors like a blackout while conducting the assessment process. Consequently, according to the educators in the study, online assessment came with variables that affected students’ outcomes.

Montenegro et al. (2021) performed a systematic review of the literature on the impact of assessment in higher education during the pandemic. After selecting and reviewing 13 studies, the results indicated that the lack of training on online assessment limited teachers to access and use of a number of digital resources and tools that could have improved the assessment by reinforcing its principles. For example, the educators used Moodle platforms, which allowed the application of multiple data points such as test-type questionnaires and discussion forums; however, video conferencing via ZOOM, Google Classroom, and Skype was the only way to monitor students online while taking tests or other data points (i.e., all instruments used to assess students). This is consistent with Joshi et al.’s (2020) study that aimed to identify the barriers faced by teachers during online teaching and assessment in different home environment settings in India. The findings revealed that teachers faced a lack of technical knowledge and resources since teachers were not aware of online assessment platforms for evaluation and were not well equipped and trained to do online assessment; only a few teachers who were already trained on institutionally supported technology found it easy to conduct the assessment in virtual environments. Consequently, educators were not able to

create measures and use different resources to avoid academic dishonesty or to provide solutions in case of external factors interfering with the assessment process.

Based on the studies mentioned above, assessing in an online educational environment involves not only pedagogical barriers but also technical ones. The problem remained in the lack of access to an internet connection, platforms, and websites, the lack of technological devices and gadgets, and the lack of information and specific guidelines about how to create countermeasures to face unexpected situations.

2.2.3 Assessment Challenges Related to Students

The evaluation of online learning foregrounded the difficulty of space distance between the teacher and the student since one was away from the other. There was no certain way to assure that the student was the one who performed the exams and not someone else or to adequate the conditions in which the test was given (Tirivangasi et al., 2021). Furthermore, Dendir and Maxwell (2020) conducted a study to evaluate the level of academic dishonesty in online courses. They compared student performance before and after the introduction of online proctoring through a webcam recording software, and the data showed that students were more likely to cheat if they knew that there was no protocol to monitor them while being assessed. Online education provided new opportunities for learning and creative ways for academic dishonesty; therefore, the study emphasized that incorporating technological tools could help educators reduce or mitigate academic dishonesty.

In onsite education, the teachers might have direct feedback about the students' emotional and physical state; however, this was not the case while assessing online. Consequently, teachers could not receive this first-hand feedback to verify if students understood the topics or even if they were interested in paying attention to the class or to the instructions for evaluations (Thambusamy & Singh, 2021). Additionally, Abduh (2021) mentioned in his study that students' lack of participation or interaction during online classes was very challenging for teachers due to technological problems, lack of knowledge of specific digital platforms and tools, and their overall health. Thus, the educators had to consider those additional criteria while assessing students.

In addition, in a similar study conducted by Barrot et al. (2021) regarding online learning challenges, the students expressed strong feelings of frustration since external factors (e.g., Internet connection problems) often prevented them from getting better grades, and they even mentioned that in some cases teachers failed to provide alternatives or solutions to those problems.

Elzari et al. (2020) carried out a study to explore the impact of e-learning and assessment on the performance of students and faculty, and the challenges to their sustainability. The results obtained through a student satisfaction survey and online staff focus group about the online

learning experiences and weekly staff perception reports revealed that fifty-eight point eight percent (58.8%) of students indicated their high satisfaction towards virtual classrooms, online assessments, and online workshops. Contradictory, in the study conducted by Espinoza et al. (2021) which aimed to see what was the emotional state of higher education students during online education as a result of the pandemic, showed that sixty-seven percent (67%) of the participants explained that the shift to a virtual modality was detrimental to their emotional health and that the lack of face-to-face interaction influenced their academic performance unfavorably.

Considering the studies above, when it comes to the challenges associated with students that teachers need to overcome to ensure fair and reliable assessment in online settings, the main ones are related to students' academic dishonesty, technological problems, and health problems.

Chapter III

Methodology

3.1 Research approach and design

According to Bhandari (2020), quantitative research involves the generalization of facts about a subject, that is, data presented through numbers and statistical graphs. In this context, for the purpose of presenting a general description of the major challenges teachers face when assessing students in online environments, this descriptive study collected data through a survey instrument that allowed the description of the demographic characteristics of participants and the challenges they faced. Thus, this descriptive research study focused on a quantitative approach that aimed to describe a real-world problem by providing significant facts about it (McCombes, 2019).

3.2 Participants and context

The context in which the study focused was the virtual educational environment generated by the pandemic since it was the reason for the shift to online classes in the Ecuadorian context. To avoid threats to the validity and reliability of the study, the participants were selected by systematic sampling. Systematic sampling consists in selecting a random starting point (i.e., a participant); the rest of the participants were chosen based on the periodic interval, which is calculated by dividing the number of participants by the desired sample (Hayes, 2021). Hence, from a total of 118 teachers at the Faculty of Philosophy, a sample of 21 teachers was selected, considering that the sampling interval was 5.6.

3.3 Data collection instruments and data analysis

The instrument for data collection was a survey. The survey results were analyzed through descriptive statistics using Microsoft Excel. The analysis focused on teachers' challenges and their relationship to demographic factors. Since there is not much information about the challenges that teachers face while assessing in online educational settings, it was necessary to conduct an in-depth interview with semi-structured questions to explore the field with six teachers randomly selected. Although only six teachers were considered, a pilot interview with a different teacher was conducted to secure the reliability of the interview instrument. The interviewees were given informed consent forms due to ethical considerations. Thus, the data collected through the interview served as a basis for the creation of initial categories to be included in the survey. The survey instrument itself was designed considering the categories determined through the in-depth interview and the literature available about the topic.

Chapter IV

Results and Discussion

4.1 Result

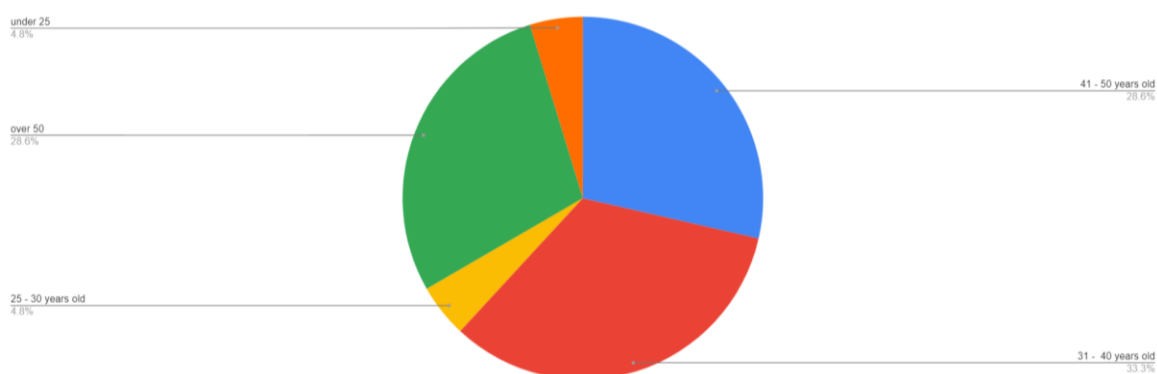
The survey consisted of two sections. The first section of the survey encompassed the following information about the participants: age, gender, area of residency, highest degree or school level completed, and years of teaching experience. The second section comprehended a total of 15 questions distributed in the following categories: online education knowledge; digital resources and tool management and application; type of assessment used in the online environment; students' academic dishonesty; feedback process; interaction during the assessment (i.e., students' participation, student-student interaction during assessment); and threats to students' assessment in online education.

Section 1

This section encompasses the demographic data of the participants.

Figure 1

Age



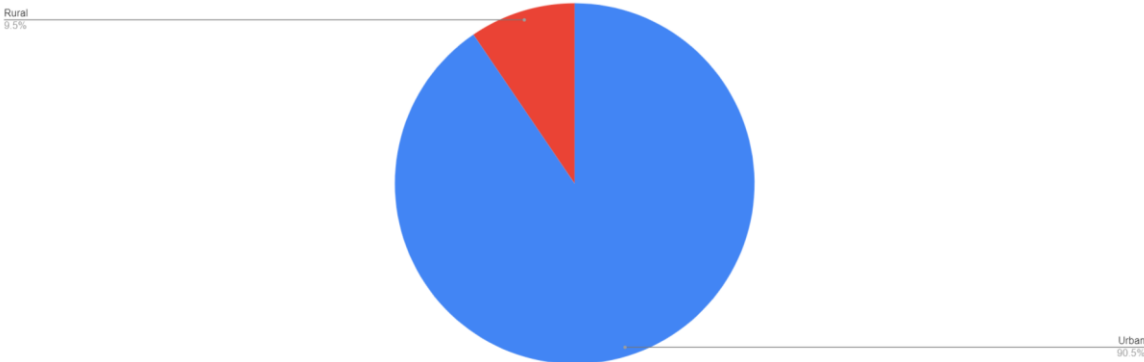
According to Figure 1., thirty-three point three percent (33.3%) of teachers were between 31 and 40 years old. The percentage of teachers between 41 and 50 years old and over 50 years old corresponded to twenty-eight point six percent (28.6%), respectively. Whereas teachers under 25 years old and teachers between 25 and 30 years old represented four and eight point eight percent (4.8%) of the respondents.

Figure 2
Gender



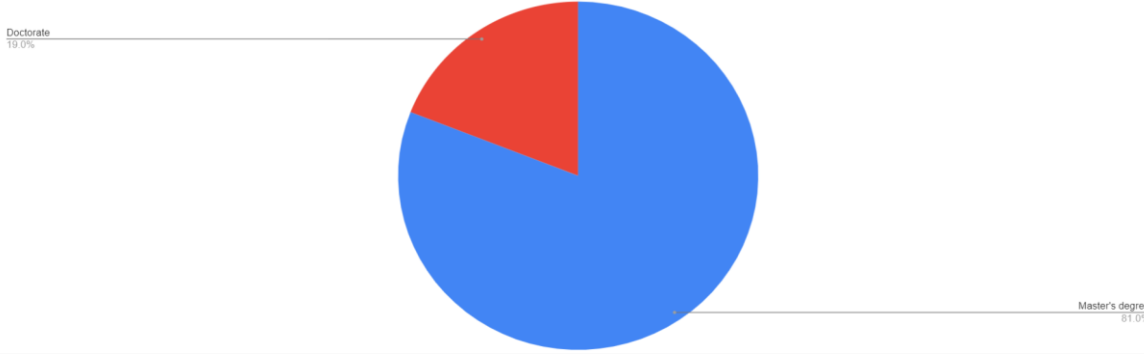
According to Figure 2, from the 21 respondents, forty-two point nine percent (42.9%) identified themselves as male and the other fifty-seven point one percent (57.1%) identified themselves as female. None of the participants identified themselves by other gender.

Figure 3
Area of residency



Regarding the area of residency, ninety point five percent (90.5%) of the respondents stated that they lived in an urban area in comparison to nine point five percent (9.5%) of teachers that stated that they lived in a rural area as seen in Figure 3.

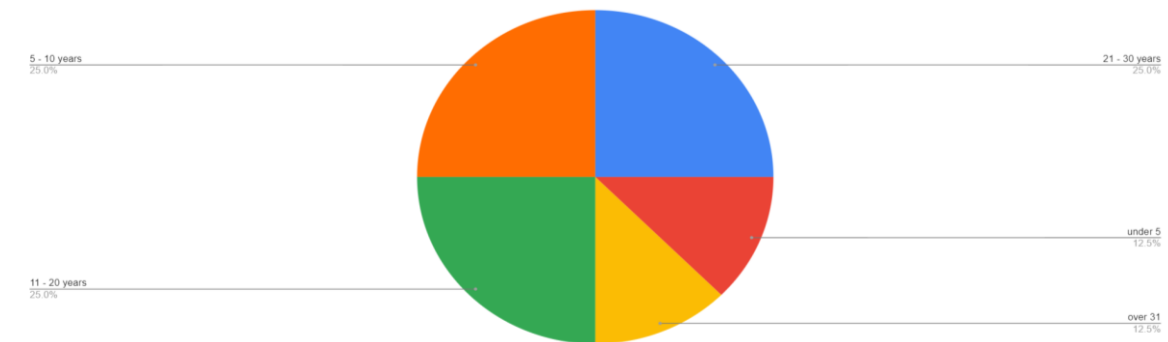
Figure 4
Highest degree or school level completed



Concerning the highest degree or school level completed, most of the respondents, eighty-one percent (81%), had a master's degree while only nineteen percent (19%) of the respondents had a Ph.D. as expressed in Figure 4.

Figure 5

Years of teaching experience



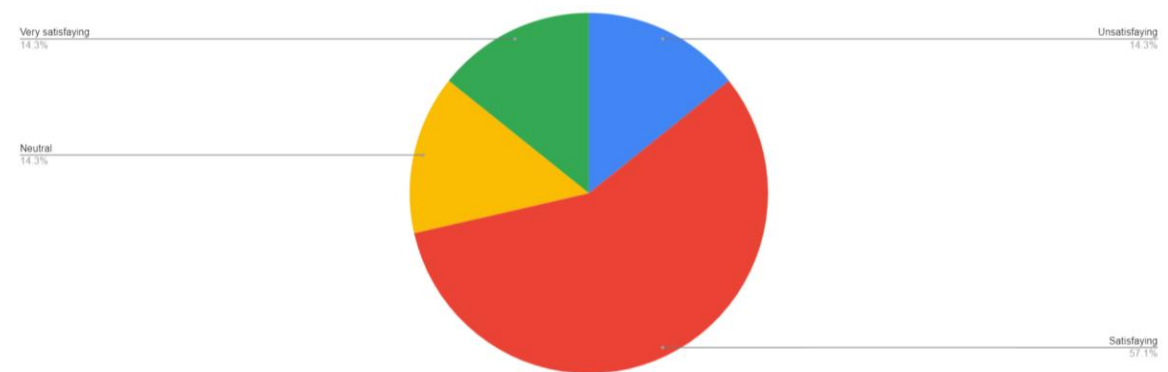
On the one hand, twelve point five percent (12.5%) of the teachers had under 5 years of teaching experience. On the other hand, the same percentage, twelve point five percent (12.5%) of the teachers reported having over 31 years of teaching experience. The other seventy-five percent (75%) was represented as follows: twenty-five percent (25%) were teachers who had from 5 to 10 years of teaching experience, twenty-five percent (25%) of educators who had from 11 to 20 years of experience, and the last twenty-five percent (25%) were teachers who had from 21 to 30 years of teaching experience as shown in Figure 5.

Section 2

Section 2 considered the following categories within the survey: online education knowledge; digital resources and tool management and application; type of assessment used in the online environment; students' academic dishonesty; feedback process, interaction during the assessment; and threats to students' assessment in online education.

Figure 6

Teachers' experience during online classes



From the 21 respondents represented in Figure 6, fourteen point three percent (14.3 %) indicated that their experience during online classes was very satisfying while fifty-seven point one percent (57. 1%) answered that it was satisfying. Conversely, fourteen point three percent

(14.3%) of the respondents were neutral about their experiences while fourteen point three percent (14.3%) described their teaching experience as unsatisfying.

Figure 7

Years of experience in online assessment before the pandemic

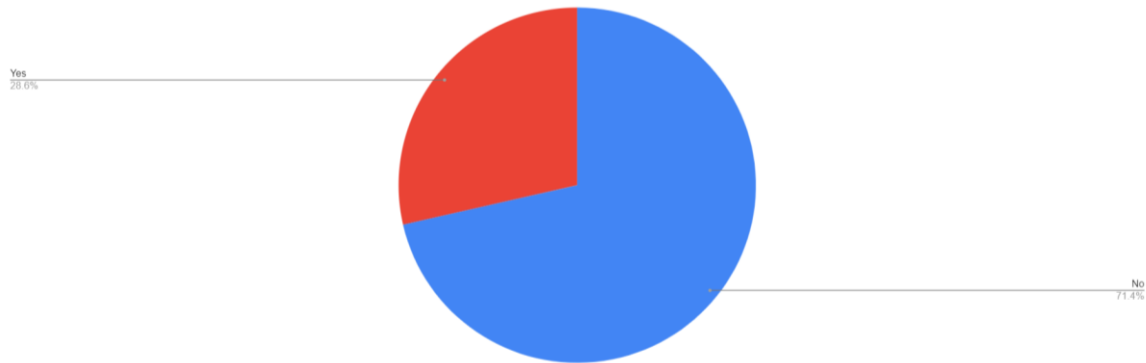
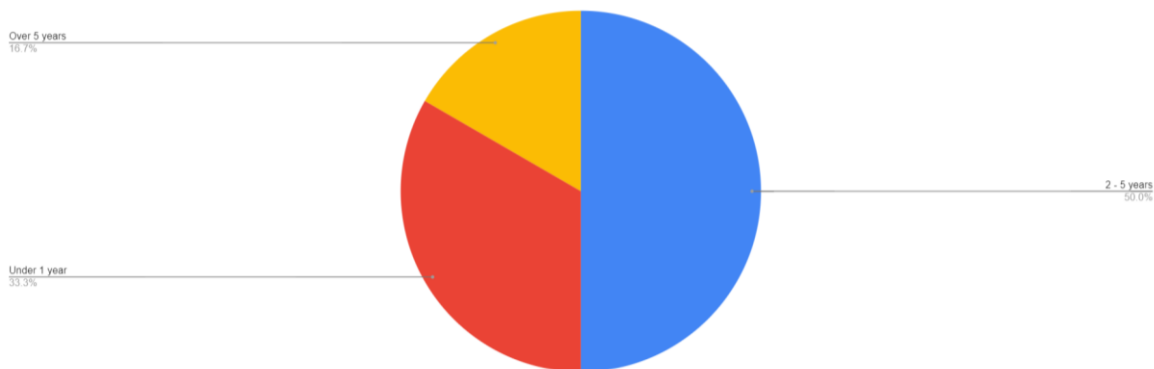


Figure 7 shows that only twenty-eight point six percent (28.6%) answered that they had experience teaching, and therefore assessing in online environments.

Figure 7.1

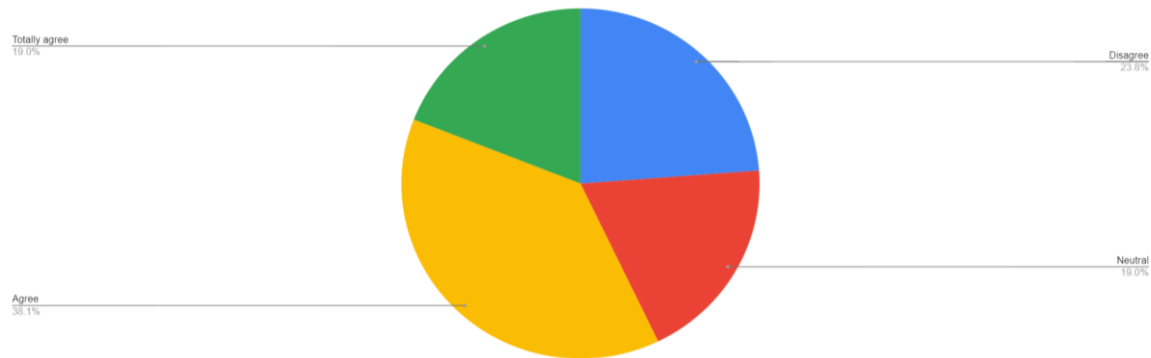
Number of years of experience in online assessment before the pandemic



Additionally, Figure 7.1 represents the sub-question addressing the number of years of experience in a virtual modality. Twenty-eight point six percent (28.6%) of the participants responded that they had experience teaching in an online environment (i.e., a total of 6 teachers). Out of these 6 respondents, fifty percent (50%) indicated that they had between 2 and 5 years of experience, thirty-three point three percent (33.3%) pointed out that they had less than 1 year of experience, and only sixteen point seven percent (16.7%) expressed that they had over 5 years of experience teaching in a virtual modality.

Figure 8

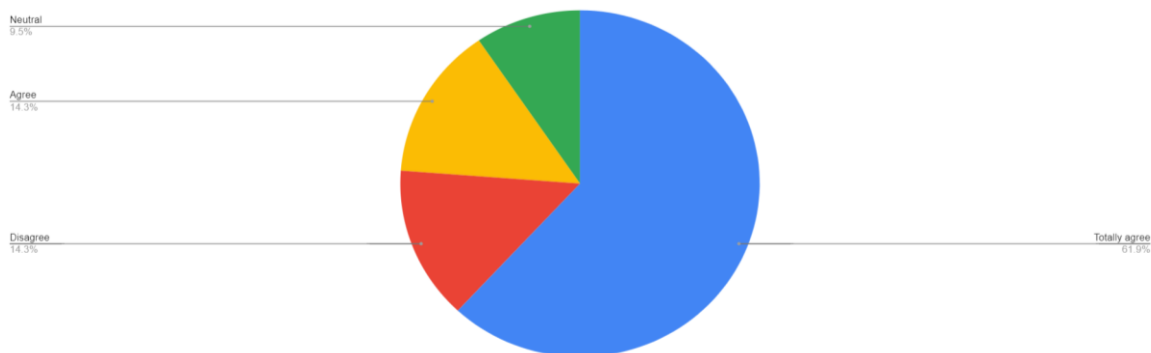
Institutional training to assess higher education students in virtual environments



As illustrated in Figure 8, most teachers foregrounded that they had received certain training regarding online assessment. This means that nineteen percent (19%) of the respondents totally agreed to the statement, and thirty-eight percent (38.1%) agreed. In contrast, only twenty-three point eight percent (23.8%) answered that they did not agree to that fact whereas nineteen percent (19%) took a middle ground.

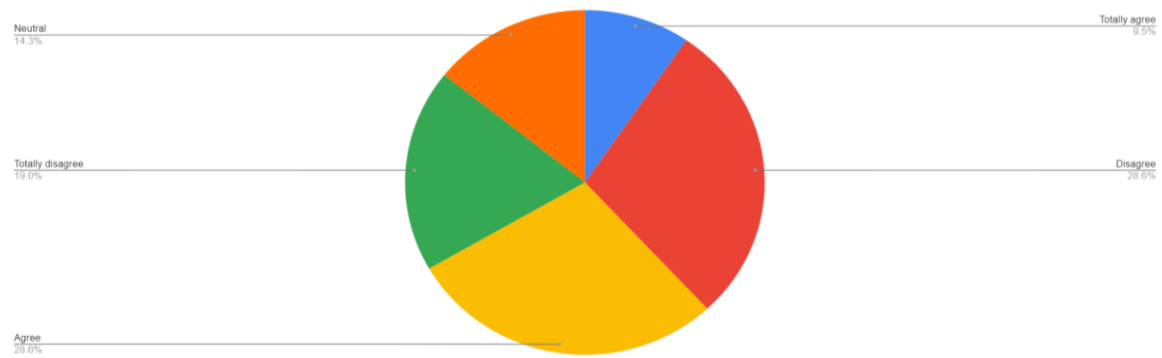
Figure 9

Self-funded training on tools and platforms to assess students in virtual environments



As shown in Figure 9, sixty-one point nine percent (61.9%) of the respondents totally agreed that they had the initiative to cover all the expenses for taking courses on tools and platforms to assess students in virtual environments while fourteen point three percent (14.3%) agreed to this fact. In contrast, fourteen point three percent (14.3%) disagreed with the statement and only nine point five percent (9.5%) maintained a neutral position.

Figure 10
Assessment instruments format



When asked if during online classes the assessment instruments had the same format as the ones used in face-to-face settings, twenty-eight point six percent (28.6%) of the respondents agreed to the statement, and nine point five percent (9.5%) of them totally agreed. In comparison, nineteen percent (19%) of the participants totally disagreed with the affirmation, twenty-eight point six percent (28.6%) disagreed, and fourteen point three percent (14.3%) had a neutral position.

Figure 11
Tools, platforms, and other digital resources to assess students during online classes

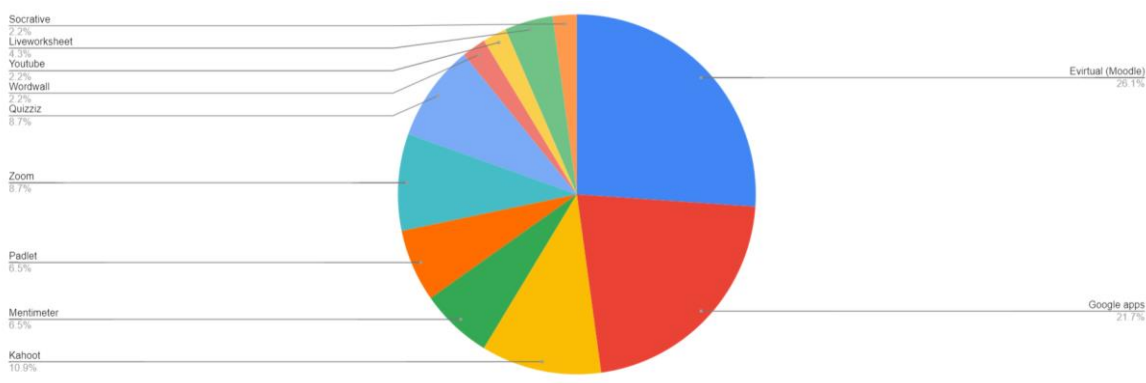
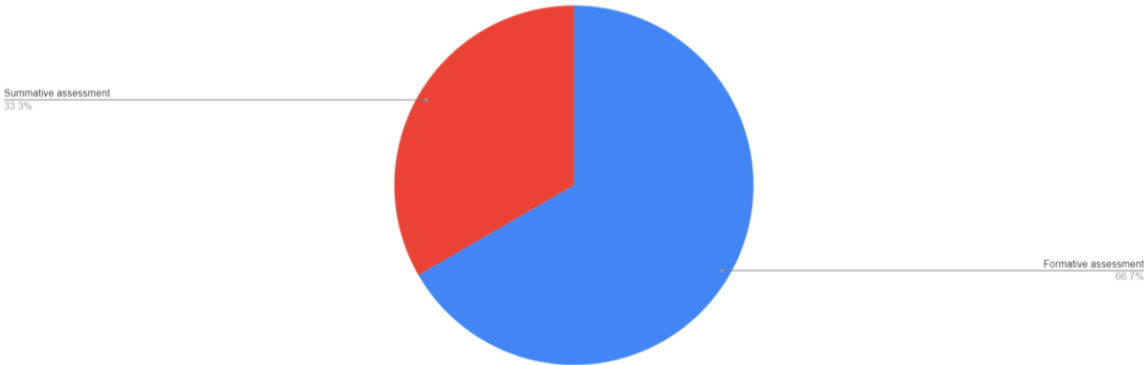


Figure 11 shows the most common apps and tools used during online classes to assess students. Twenty-six point one percent (26.1%) mentioned “Evirtual ” (i.e., the official university platform run by Moodle). Besides, twenty-one point seven (21.7%) listed Google apps, such as Google Drive, Google Forms, and Google Classroom. Also, ten point nine percent (10.9%) indicated that they used Kahoot, and eight point seven percent (8.7%) pointed out that they used Quizziz and Zoom respectively. Additionally, six point five percent (6.5%) of the participants stated that they incorporated in their assessment Padlet and Mentimeter correspondingly. Finally, the remaining ten point nine percent (10.9%) encompassed: Socrative, Padlet, Wordwall, Quizziz, Youtube, and Liveworksheet.

Figure 12

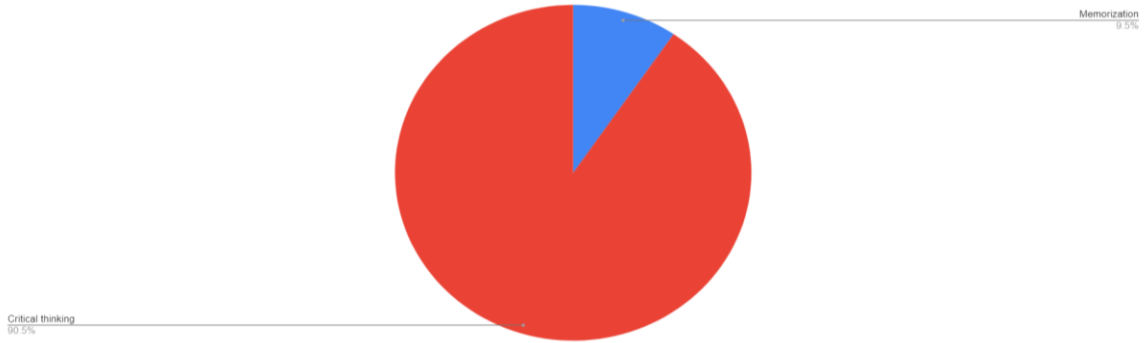
Type of assessment considered the most effective during online classes



As viewed in Figure 12, sixty-six point seven percent (66.7%) of the respondents, expressed that formative assessment was the most effective during the online classes period. While thirty-three point three percent (33.3%), reported that summative assessment was the most useful.

Figure 13

Skills considered during online classes



When asked to which skill teachers oriented their assessment instruments, ninety point five percent (90.5%) of the respondents chose critical thinking, and only nine point five percent (9.5%) chose memorization as seen in Figure 13.

Figure 14

Concerns about students' academic dishonesty during virtual classes

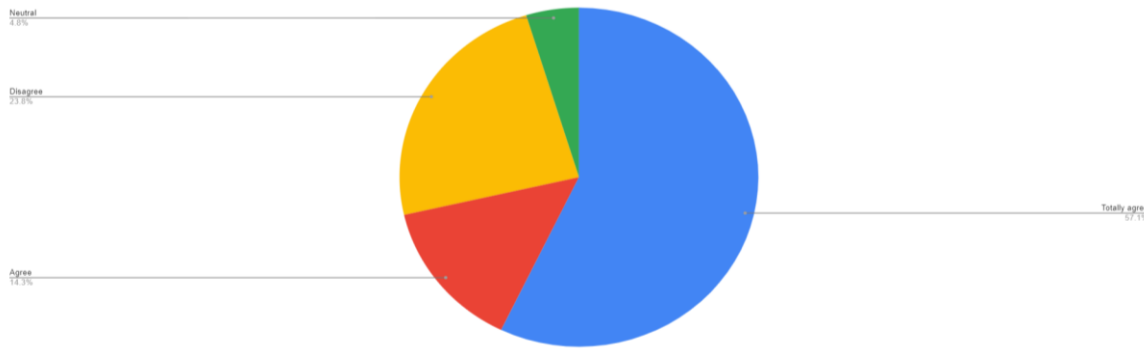


Figure 14 exhibits that most teachers had greater concern about their students' academic

dishonesty during online classes than in face-to-face classes. This corresponds with the fact that fifty-seven point one percent (57.1%) totally agreed with the statement, and fourteen point three percent (14.3%) agreed. Nevertheless, twenty-three point eight percent (23.8%) disagreed with the assertion, and four point eight percent (4.8%) stated neutral.

Figure 15
Students' nonverbal language feedback in online classes

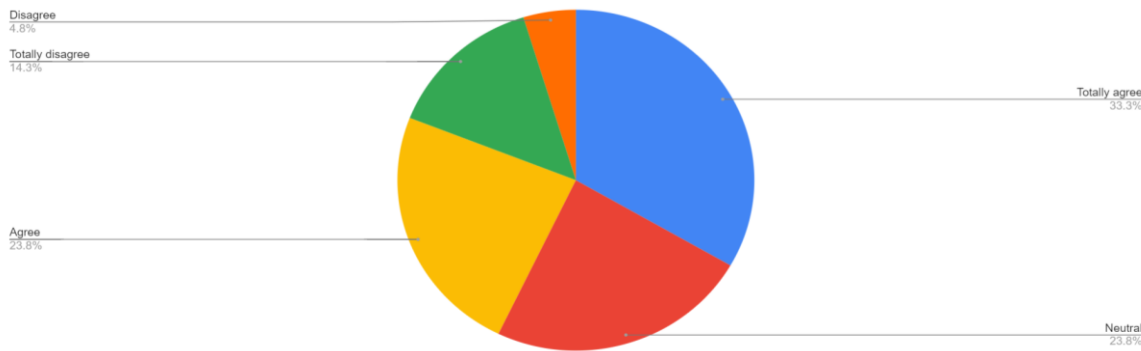
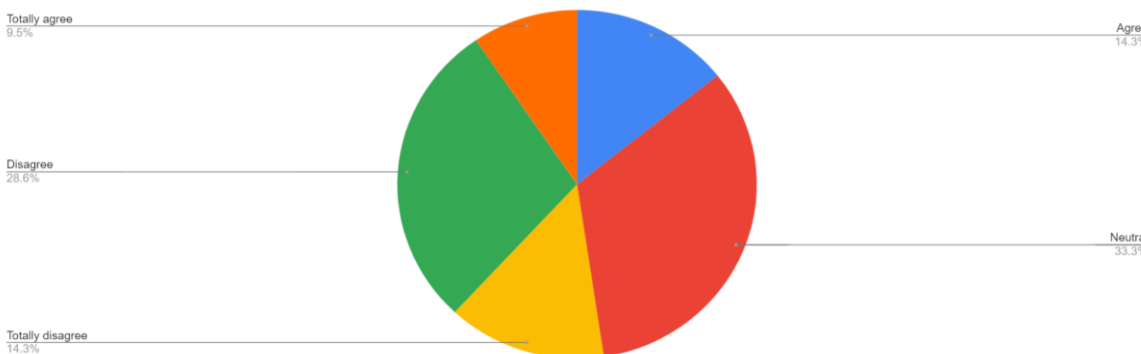


Figure 15 discloses that the educators perceived students' nonverbal language feedback as higher during face-to-face classes than in online classes since thirty-three point three percent (33.3%) totally agreed with that fact and twenty-three point eight percent (23.8%) agreed. In contrast, fourteen point three percent (14.3%) totally disagreed and four point eight percent (4.8%) disagreed, which means that some teachers regarded the non-verbal feedback from students (i.e., gestures and reaction) as higher during virtual classes. Finally, twenty-three point eight percent (23.8%) maintained a neutral position toward that statement.

Figure 16
Grading process during online classes



In

Figure 16, thirty-three point three percent (33.3%) of teachers showed a neutral position when asked if the grading process was less time-consuming during online classes. Moreover, twenty-eight point six percent (28.6%) exhibited disagreement, and fourteen point three percent (14.3%) totally disagreed with it. Likewise, fourteen point three percent (14.3%) expressed agreement and only nine point five percent (9.5%) totally agreed with the statement.

Figure 17
Students' attendance rate in the virtual modality

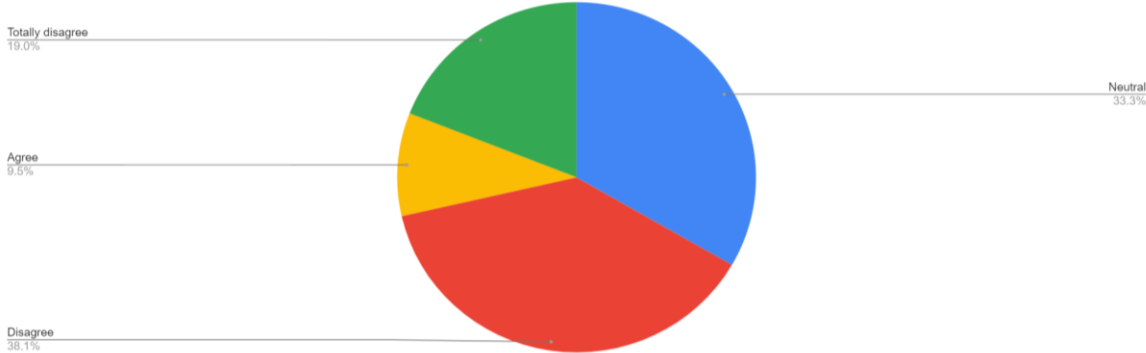


Figure 17 illustrates the perspective of teachers about the attendance rate of students during the virtual modality, thirty-eight point one percent (38.1%) disagreed, thirty-three point three percent (33.3%) were in a neutral position; while nineteen percent (19.0%) totally disagreed and nine point five percent (9.5%) agreed to the statement.

Figure 18
Students' participation rate in the virtual modality

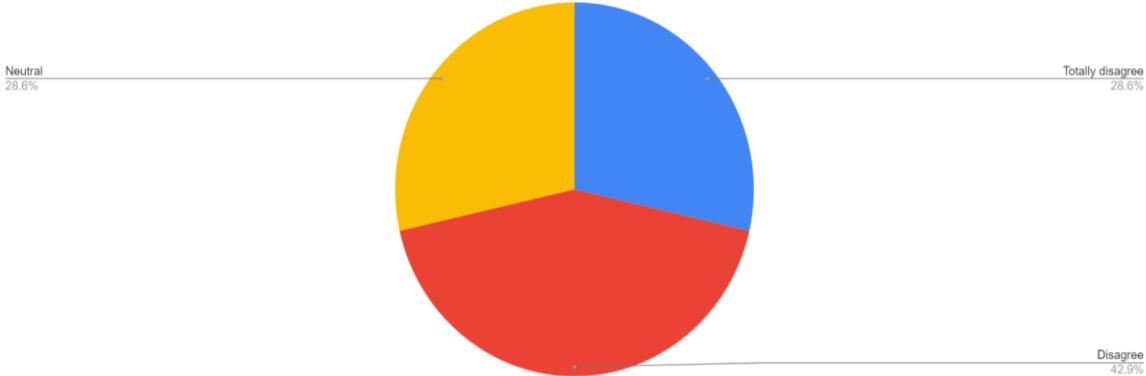
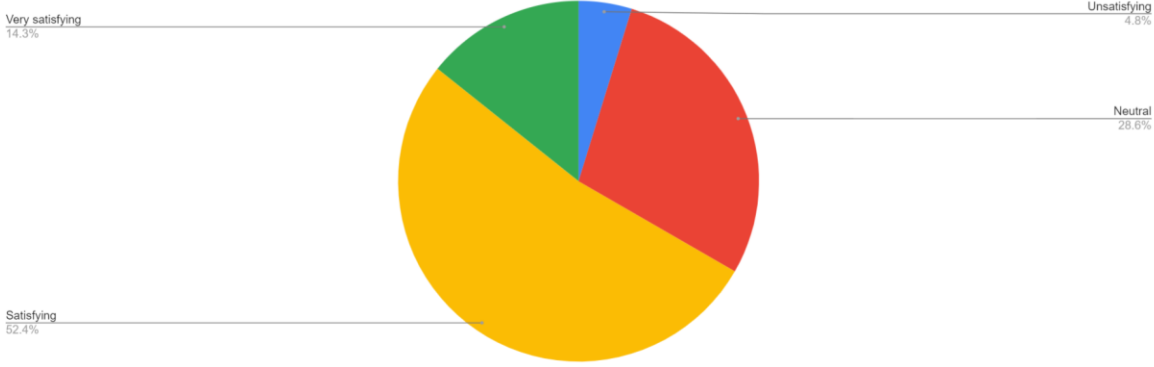


Figure 18 shows the students' participation rate in the virtual modality, in which twenty-eight point six percent (28.6%) were neutral; twenty-three point six percent (23.6%) disagreed as well; and forty-two point nine percent (42.9%) were in disagreement. That is to say that seventy-one point five percent (71.5%) of the respondents, taking into account the percentages of the ones who totally disagreed and those who disagreed, had a strong negative perception of the statement.

Figure 19

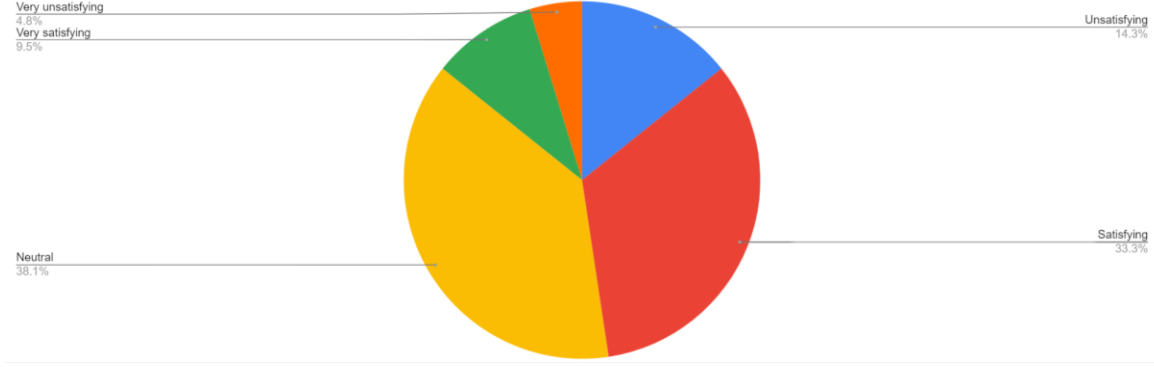
Level of satisfaction in relation to junior and senior year students' learning outcomes while doing cooperative work during online classes



In this question, the teachers were asked to state their level of satisfaction regarding the learning outcomes of junior and senior year students (i.e., from 5th to 8th semester) and first-year and sophomore-year students (i.e., from 1st to 4th semester) while doing cooperative work. According to Figure 19, fifty-two point four percent (52.4%) of teachers stated that junior and senior year students reached satisfying learning outcomes while doing cooperative work during online classes. Likewise, fourteen point three percent of participants (14.3%) indicated that the students had very satisfying outcomes, while twenty-eight point six percent (28.6%) of the respondents took a neutral position; and only four point eight percent (4.8%) rated it as unsatisfying.

Figure 20

Level of satisfaction in relation to first-year and sophomore-year students' learning outcomes while doing cooperative work during online classes



From the 21 respondents represented in Figure 20, thirty-eight point one percent (38.1%) of the educators were neutral about the first-year and sophomore-year students' learning outcomes while doing cooperative work during online classes. That is to say, they were neither satisfied nor dissatisfied with their students' learning results. Additionally, thirty-three point three (33.3%) of respondents expressed that students' academic achievements were satisfying while fourteen point three percent (14.3%) answered that they were unsatisfying.

Conversely, nine point five percent (9.5%) of the participants chose the option “very satisfying” while four point eight percent (4.8%) described it as very unsatisfying.

Figure 21

Threatening factors to students' assessment in online education

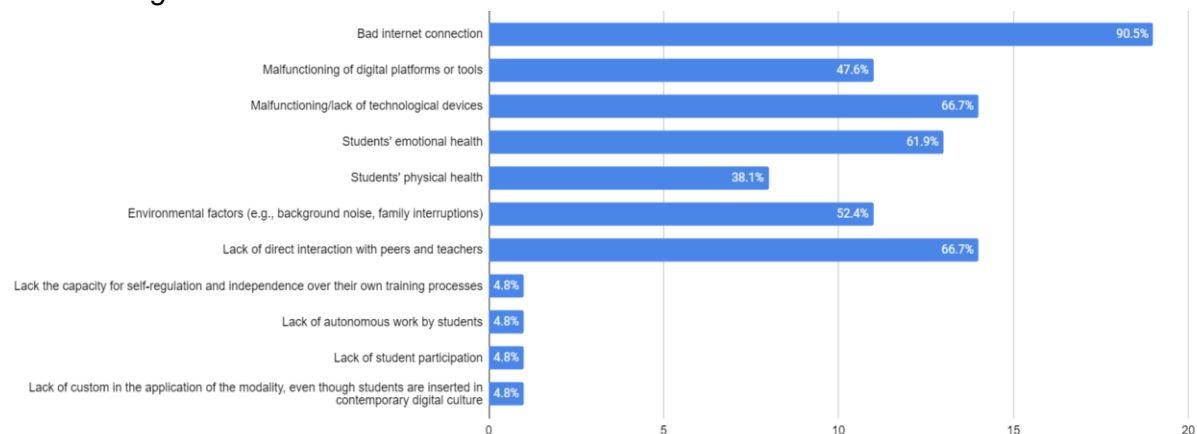


Figure 21 illustrates different factors that teachers perceived as threatening to students' assessment in online education. Ninety point five percent (90.5%) agreed that the greatest threat was a bad internet connection. Besides, sixty-six point seven percent (66.7%) selected malfunctioning or lack of technological devices. Moreover, sixty-six point seven percent (66.7%) of teachers mentioned that a lack of direct interaction with teachers and peers was also a factor that threatened assessment. Sixty-one point nine percent (61.9%) mentioned students' emotional health as a threat to assessment in online education. Also, fifty-two point four percent (52.4%) pointed out environmental factors (e.g., background noise and family interruptions) as a major threat. Likewise, forty-seven point six percent (47.6%) selected malfunctioning of digital platforms or tools, and thirty-eight point one percent (38.1%) selected the option of students' physical health as threats for students' assessment. Additionally, four point eight percent (4.8%) of the participants provided the following answers to the option “other”: 1) students' absence of self-regulation and independence for their own learning processes, 2) learners' lack of autonomous work, 3) students' low participation, and 4) students' lack of familiarity with the virtual modality requirements.

4.2 Analysis

The aim of this descriptive research was to identify the major challenges teachers face when assessing in a virtual environment. The first specific objective of the study was to determine teachers' demographic factors. Hence, the survey considered the following demographic variables: age, gender, area of residency, and level of education. Nevertheless, the analysis of the data collected shows a connection between how the educators perceived the challenges of virtual assessment and their age; therefore, this section focused only on that relation. It is worth mentioning that the other demographic variables were not considered due to the

absence of a relationship with the challenges stated by the academic staff. In the case of the area of residency, ninety point five percent (90.5%) of educators stated that they lived in an urban area and the other nine point five percent (9.5%) in rural areas as seen in Figure 3 above. Consequently, there is not a representative difference between the respondents and their areas of residency. Similarly, regarding the level of education, the data in Figure 4 did not suggest a significant distinction since eighty-one percent (81%) had a master's degree while only nineteen percent (19%) of the respondents had a PhD.

Table 1

Cross-tabulation of factors related to age

Age	Academic dishonesty	Feedback	Grading	Attendance rate	Participation rate	Satisfaction with Juniors and Seniors' performance	Satisfaction with first-years and sophomores' performance
under 25	neutral	neutral	neutral	disagree	disagree	satisfying	satisfying
25 to 30	totally agree	neutral	totally agree	disagree	neutral	neutral	unsatisfying
31 to 40	totally agree	totally agree	totally agree	disagree	totally disagree	satisfying	satisfying
31 to 40	totally agree	totally agree	totally agree	disagree	totally disagree	satisfying	very unsatisfying
31 to 40	disagree	neutral	disagree	neutral	disagree	satisfying	satisfying
31 to 40	totally agree	agree	agree	disagree	neutral	very satisfying	very satisfying
31 to 40	agree	agree	disagree	neutral	neutral	satisfying	neutral
31 to 40	totally agree	totally disagree	neutral	neutral	neutral	satisfying	neutral

31 to 40	totally agree	disagree	neutral	totally disagree	disagree	satisfying	neutral
41 to 50	totally agree	totally agree	agree	neutral	totally disagree	unsatisfying	unsatisfying
41 to 50	agree	totally agree	neutral	neutral	disagree	neutral	unsatisfying
41 to 50	agree	neutral	disagree	agree	disagree	neutral	neutral
41 to 50	totally agree	totally agree	neutral	agree	neutral	neutral	neutral
41 to 50	totally agree	totally agree	totally disagree	totally agree	totally disagree	satisfying	neutral
41 to 50	disagree	agree	agree	disagree	disagree	neutral	neutral
over 50	disagree	agree	disagree	disagree	disagree	very satisfying	very satisfying
over 50	disagree	agree	totally disagree	totally disagree	totally disagree	satisfying	satisfying
over 50	totally agree	totally agree	disagree	neutral	disagree	neutral	neutral
over 50	totally agree	totally disagree	neutral	totally disagree	totally disagree	satisfying	satisfying
over 50	totally agree	totally disagree	disagree	disagree	disagree	very satisfying	satisfying

over 50 disagree neutral neutral neutral neutral satisfying satisfying

Table 1 presents the relationship between the factors in the survey with the age of the participants: a) academic dishonesty, b) feedback and grading problems, c) students' attendance and participation issues, and d) satisfaction levels with students' academic achievements.

For the purpose of the analysis of the subsequent tables, the teachers were divided into the following age groups: 9 young teachers (i.e., 20 to 40 years old), 6 middle-aged teachers (41 to 50 years old), and 6 aged teachers (i.e., over 50 years old)

Table 2

Age group and deficient internet connection as a threatening factor

Age Group	Number of respondents	Deficient internet connection
Young aged teachers	7	77.8%
Middle-aged teachers	6	100%
Aged teachers	6	100%
Total	19	

Table 2 shows that 19 out of the 21 respondents selected the option “bad Internet connection” as a threatening factor to online assessment. The 19 participants were divided into 3 age groups. Seventy-seven point eight percent only (77.8%) of young teachers regarded this factor as detrimental to virtual assessment while one hundred percent (100%) of middle-aged and aged teachers correspondingly chose it as a major threat.

Table 3

Age group and malfunctioning of digital platforms or tools as a threatening factor

Age Group	Number of respondents	Malfunctioning of digital platforms or tools
Young aged teachers	4	44.4%
Middle-aged teachers	3	50%
Aged teachers	3	50%
Total	11	

Table 3 illustrates that 11 out of the 21 teachers viewed the malfunctioning of digital platforms or tools as a threat to e-assessment. Thus, from the three age groups, fifty percent (50%) of

middle-aged and fifty percent (50%) of aged group teachers selected that option while forty-four point four percent (44.4%) of young teachers chose the same threatening factor.

Table 4

Age group and malfunctioning or lack of technological devices as a threatening factor

Age Group	Number of respondents	Malfunctioning or lack of technological devices
Young aged teachers	4	44.4%
Middle-aged teachers	5	83.3%
Aged teachers	5	83.3%
Total	14	

According to Table 4, 11 out of the 21 educators pointed out malfunctioning or lack of technological devices as a threatening factor. Eighty-three point three percent (83.3%) of middle-aged and aged teachers respectively considered this aspect as detrimental to online assessment. Nevertheless, this factor was not perceived as threatening for young teachers since only forty-four point four percent (44.4%) of them selected it in comparison to the middle-aged and aged teachers.

Table 5

Age group and lack of direct interaction with peers and teachers

Age Group	Number of respondents	Lack of direct interaction with peers and teachers
Young aged teachers	6	66.6%
Middle-aged teachers	6	100%
Aged teachers	2	33.3%
Total	14	

As shown in Table 5, 14 out of the 21 faculty members perceived the lack of direct interaction with peers and teachers as an issue when assessing online. One hundred percent (100%) of middle-aged teachers reported the lack of direct interaction with peers and teachers as highly prejudicial to students' online assessment. In the case of young educators, sixty-six point six percent (66.6%) of them regarded it as a threat. Conversely, only thirty-three point three

percent (33.3%) of aged teachers viewed it as a threat. Thus, there was a significant difference in how they perceived that threat.

Table 6

Age group and students' emotional health

Age Group	Number of respondents	Students' emotional health
Young aged teachers	5	55.5%
Middle-aged teachers	4	66.7%
Aged teachers	4	66.7%
Total	13	

Table 6 exhibits that 13 out of the 21 participants answered that students' emotional health represented a challenge when conducting online assessment. Fifty-five point five percent (55.5%) of young teachers considered that students' emotional well-being could interfere with their assessment. Additionally, the same percentage of middle-aged and aged teachers, that is to say sixty-six point seven percent (66.7%), chose the same factor as a threat.

Table 7

Age group and students' physical health as a threatening factor

Age Group	Number of respondents	Students' physical health
Young aged teachers	3	33.3%
Middle-aged teachers	2	33.3%
Aged teachers	3	50%
Total	8	

As seen in Table 7, 8 out of 21 respondents marked the option "students' physical health as a possible threat to assessment in virtual environments. On the one hand, fifty percent (50%) of the aged group teachers gave more importance to students' physical health as a challenging factor. On the other hand, young and middle-aged teachers had a lower percentage since just thirty-three point three percent (33.3%) of the educators pointed out that option correspondingly.

Table 8

Age group and environmental factors as a threat to online assessment

Age Group	Number of respondents	Students' environmental factors
Young aged teachers	6	66.6%
Middle-aged teachers	2	33.3%
Aged teachers	3	50%
Total	11	

Table 8 foregrounds that out of the 21 teachers, only 11 considered students' environmental factors as threatening. Young teachers perceived that the environment in which the student was being assessed was a challenge since sixty-six point seven percent (66.6%) of them chose this factor. Similarly, half of the aged group teachers rated it as a significant challenge while only thirty-three point three percent (33.3%) of middle- aged teachers chose it.

4.3 Discussion

Although Liu et al. (2022)) in their research about the relationship between teachers' age and their use of Information Communication Technology (ICT) for online classes concluded that there is no correspondence between those variables, the findings in the present study suggested that there could be a connection among teachers' age, the challenges they had, and how they handle assessment in the virtual modality. Thus, after revising the data, it is possible to state that teachers' age played an important role in the assessment challenges that they perceived during online classes. The main challenges to online assessment mentioned by the educators are the following: a) increased academic dishonesty as a result of a lack of knowledge of platforms, tools, and strategies to assess virtually; b) low attendance and participation rates as a result of a lack of direct interaction or lack of digital resources; c) poor feedback as a result of the absence of face-to-face interaction and deficient Internet connection as well as problems with technological tools and platforms when grading students; and d) factors related to students' emotional and physical health and learning environment.

The following paragraphs address the link between teachers' major challenges and their demographic features, specifically age. Even though most of the participants stated to have a satisfactory experience with online education and assessment, the respondents exhibited different postures and concerns about the challenges previously mentioned. Thus, it was

possible to infer that those challenges were likely to have a negative effect on the reliability, validity, practicality, and washback of online assessment.

First, the young teachers and the middle-aged teachers expressed a higher concern about students' academic dishonesty during online assessment since only one participant from each age group disagreed with the statement. Whereas in the case of the aged group teachers, half of them did not agree with the statement that there was a higher concern about students' academic probity; interestingly enough, those same educators had previous experience teaching in an online setting. Hence, considering that the majority of middle-aged and young teachers exhibited great worry about their students' academic probity, it is possible to deduce that there was a concern for the validity of students' results. This was consistent with the studies conducted by Gikandi & Njuguna (2020) and Husain (2021) that pointed out that teachers' lack of knowledge of how to assess online or online illiteracy limited the resources and tools that the educators could have used to create mechanisms to make assessment more reliable and valid by engaging students and preventing them from committing academic dishonesty

On the one hand, in terms of the feedback received from students during online classes, most of the teachers, regardless of their age, expressed that students' feedback during face-to-face classes was higher in comparison to their feedback during online classes. Thus, there is no wonder why most middle-aged and aged teachers indicated that the greatest threat when assessing virtually was deficient internet connection as well as the malfunctioning platforms and tools. This can be illustrated through Wu's (2021) study in which the educators explained that the online modality negatively affected their interaction and the non-verbal feedback they gathered from students since they spent most of the time asking about the state of the students' devices and their connection service. On the other hand, the respondents presented contrary opinions regarding the grading process that implied problems with the practicality of assessment in online settings. The majority of young teachers agreed that the grading process was more effective during online classes while the aged group teachers mostly disagreed with the same statement. Surprisingly, the middle-aged teachers equally agreed, disagreed, and had a neutral position. This implies that depending on the teachers' age, online assessment could be more practical or more difficult.

The young and the aged group teachers disagreed with the assertion that students' attendance rate was higher during online classes than in on-site classes while the middle-aged teachers group agreed with it. Nevertheless, seventy-one point five percent (71.5%) of the respondents indicated that the students' participation rate during virtual classes was lower than in face-to-face classes, meaning that even if the students attended online classes, the educators did not consider they were as engaged. Therefore, it is not surprising that all the

middle-age teachers and most of the young educators rated the lack of direct interaction with teachers and peers as a threat to assessment, which means that teachers struggle to ensure the reliability of the assessment process in online classes. Correspondingly to those findings, Miao (2022) carried out a study that revealed that face-to-face social interaction directly influenced the class engagement in the teaching-learning process since the teacher-student and the student–student interaction influenced students' understanding and overall performance. The research also suggested that teachers' knowledge of digital tools and access to technological resources could have contributed to a better classroom dynamic and interaction. Similarly, Espinoza et al. (2021) remarked the significance of face-to-face interaction in students' academic performance.

Finally, the young teachers and the aged teachers' groups graded the first-year, sophomore-year, junior, and senior students' learning outcomes in cooperative work as satisfactory; furthermore, most middle-aged teachers maintained a neutral attitude towards it. Nonetheless, this could be subject to other issues as the ones the educators denoted when asked about the threats to students' online assessment. For example, sixty-six point seven percent (66.7%) pointed out the malfunctioning or lack of technological devices, sixty-one point nine percent (61.9%) considered students' emotional health, fifty-two point four percent (52.4%) pointed out environmental factors, such as background noise and family interruptions, and forty-seven point six percent (47.6%) mentioned malfunctioning of platforms. The factors mentioned above could have caused a negative washback in students' assessment since as observed in the studies conducted by Barrot et al. (2021) and by Abduh (2021), students felt that the assessment was not fair and expressed great frustration due to the lack of measures to ensure that external factors as the ones mentioned above did not interfere with their grades.

Chapter V

Conclusions and Recommendations

5.1 Conclusions

Considering that assessment is a fundamental part of the teaching-learning process, educators must ascertain that it is carried out following the same principles regardless if it is an on-site or online education setting; consequently, since there is hardly any literature in the Ecuadorian context about online assessment, research on this area is crucial to understand the challenges that teachers face when assessing in virtual environments.

The purpose of this descriptive study was to examine the difficulties teachers encountered while teaching online and how these difficulties related to their demographic characteristics. Thus, the following research question was proposed as a guide for this study: What challenges do teachers face when assessing students in virtual education?

Through the survey, it was possible to determine the demographic factors of the unit of analysis. The respondents' gender, area of residency, level of education, or years of teaching experience did not reveal any significant variation toward online assessment. Nevertheless, when comparing the participants' responses to their age, they exhibited some differences and similarities in the teachers' perceptions and in how they addressed virtual assessment. First, the study results indicated that young and middle-aged teachers' apprehension for students' academic probity was greater than the teachers from the aged group since half of them had experienced teaching and assessing in a virtual modality. Second, fifty-six point five percent of the educators agreed that they received more feedback from the students in face-to-face interaction than in online settings which was mainly associated with an unstable Internet connection and malfunctioning of devices as expressed by ninety point five percent (90.5%) of them. In relation to grading in online classes versus face-to-face classes, the middle-aged teachers stated neutral, while the aged teachers group showed mainly disagreement in contrast to the young teachers who considered online grading more effective. Third, the middle-aged teachers considered that the attendance rate of students was greater in online classes than in on-site classes, but for the young and the aged groups of teachers it was the opposite; nonetheless, they all agreed that the participation from students was lower in the online setting which corresponded to the fact that sixty-six point seven percent (66.7%) of the teachers listed lack of direct interaction with teachers and peers as a threat to students' assessment. Fourth, while most educators were satisfied with the learning outcomes of senior, sophomore, and freshman students, they also indicated that the malfunctioning or lack of

technological devices and digital platforms or tools, students' emotional state, and environment were challenges that threatened assessment.

Finally, the challenges perceived by the teachers were related to the malfunctioning and lack of technological resources or digital tools, bad Internet connection, the lack of direct social interaction, students' factors like their academic probity, their learning environment, and their health. The challenges can vary among young, middle-aged and aged group teachers to a greater or lesser extent; however, they all hit a common ground: lack of knowledge and training in online assessment that could have mitigated or solved any problem to guarantee a valid, reliable, and practical assessment.

5.2 Recommendations

Since this study has provided little insight into what were the challenges teachers faced while assessing students in an online setting and how they represented threats to the assessment principles, further research is necessary to help educators identify issues they might face and create countermeasures that apply to virtual contexts. Thus, since the sample of this study was not representative enough for generalization, it is recommended for future research to conduct a similar study with a bigger sample. In addition to teachers' age, other variables, such as the years of teaching experience could be explored in more detail.

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Annexes

Annex A: Informed consent

Teachers' Assessment Challenges in Online Education

Informed Consent

Purpose of the research: You are being asked to participate in the descriptive research that is being done by Laura Bacilio, student at Pedagogía de los Idiomas Nacionales y Extranjeros at Universidad de Cuenca and professor Sandra Cabrera-Moreno. The purpose of this research is to analyze the major challenges teachers face when assessing in virtual environments.

This consent form contains important information about this descriptive research and what to expect if you decide to participate. Please consider the information carefully. Feel free to ask questions before making your decision on whether or not to participate.

Key information:

The purpose of this descriptive research is to analyze the major challenges teachers face when assessing in virtual environments. The major requirement of the research is one interview. There is minimal risk for participants. The results of this study may have pedagogical incidence in virtual education. Your participation in this project will require you to spend no more than 30 minutes.

Risks: There is minimal risk for the participant.

Benefits: The results will inform us about the major challenges teachers face in virtual assessment and the pedagogical incidence embedded in this process.

Confidentiality of the information:

To render data entirely anonymous, no names will be mentioned in any document. All digital information will be deleted once the project has finished.

Right to withdraw from the research: Your participation in this descriptive research is completely voluntary. That is, you can withdraw participation at any time without penalty. If you have any questions or doubts, please contact me at laura.bacilio@ucuenca.edu.ec

CONSENT

Written agreement will indicate that you have read this form and that all questions have been answered to your satisfaction.

*I agree to participate in this project

Name: _____

Signature: _____

Annex B: In-depth interview questions

ENTREVISTA SOBRE LA EVALUACIÓN EN CLASES VIRTUALES

1. ¿Cuál ha sido su experiencia durante las clases virtuales?
2. ¿Qué usaba para evaluar? ¿Qué procedimientos o estrategias específicas usaba para evaluar?
3. ¿Cuáles fueron los recursos proporcionados por la universidad que contribuyeron al proceso de evaluación de los estudiantes en ambientes virtuales?
4. ¿Cuáles fueron los recursos que usted implementó para evaluar? ¿Cuáles fueron los puntos positivos y negativos de los recursos que usó?
5. Desde su punto de vista como docente, ¿qué tipo de inconvenientes tuvieron los estudiantes al ser evaluados?
6. ¿Cuáles cree usted que son las dificultades o las oportunidades que las clases en línea han creado para el proceso de evaluación?

Annex C: Survey

Teachers' Assessment Challenges in Online Education

SECTION 1

INFORMATION ABOUT THE PARTICIPANTS

Email address _____

Age (Years)

- Under 25
- 25 - 30 years old
- 31- 40 years old
- 41 - 50 years old
- Over 50

Gender

- Female
- Male

Other _____

Area of residency

- Rural
- Urban

Highest degree or school level completed

- Bachelor's degree
- Master's degree
- Doctorate

Years of teaching experience

- Under 5
- 5-10 years
- 11-20 years
- 21-30 years
- Over 31

SECTION 2

ONLINE EDUCATION KNOWLEDGE

1. Rate your experience during online classes

- Very satisfying
- Satisfying
- Neutral
- Unsatisfying
- Very unsatisfying

2. Before the pandemic, had you had any experience teaching in a virtual modality?

If yes (answer question 2.1 and go to question 3)

2.1 Choose the number of years of experience you had teaching in a virtual modality before the pandemic

- Under 1 year
- 2-5 years
- Over 5

If no (go to question 3)

3. Rate your level of agreement with the following statement

	Totally agree	Agree	Neutral	Disagree	Totally disagree
The higher-level institution where I work provided me with training to assess students in virtual environments					

DIGITAL RESOURCES AND TOOL MANAGEMENT AND APPLICATION

4. Rate your level of agreement with the following statement

	Totally agree	Agree	Neutral	Disagree	Totally disagree
I take courses about tools and platforms to assess students in virtual environments on my own initiative					

5. Rate your level of agreement with the following statement

	Totally agree	Agree	Neutral	Disagree	Totally disagree
During online classes, the assessment instruments had the same format as the ones used during face-to-face classes					

6. Mention some of the tools, platforms or other digital resources that you used to assess students during online classes

TYPE OF ASSESSMENT USED IN ONLINE ENVIRONMENT

7. Choose the type of assessment that according to your criteria was the most effective during online classes

- Formative assessment
- Summative assessment

8. To what type of skills were your assessment instruments oriented during online classes

- Memorization
- Critical thinking

STUDENTS' ACADEMIC DISHONESTY

9. Rate your level of agreement with the following statement

	Totally agree	Agree	Neutral	Disagree	Totally disagree
My concern about the academic dishonesty of my					

students was greater during virtual classes than during face-to-face classes					
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FEEDBACK PROCESS

10. Rate your level of agreement with the following statement

	Totally agree	Agree	Neutral	Disagree	Totally disagree
The feedback that I got from students' nonverbal language (e.g., gestures, reactions) was higher in face-to-face classes than in virtual classes					

11. Rate your level of agreement with the following statement

	Totally agree	Agree	Neutral	Disagree	Totally disagree
The grading process of assessment instruments (e.g., lessons, tests) was more efficient during online classes					

INTERACTION DURING THE ASSESMENT

STUDENTS' PARTICPATION

12. Rate your level of agreement with the following statement

	Totally agree	Agree	Neutral	Disagree	Totally disagree
Students' attendance rate was higher in the virtual modality that in face-to-face modality					

13. Rate your level of agreement with the following statement

	Totally agree	Agree	Neutral	Disagree	Totally disagree
Students' participation was more active during online classes than during face-to-face classes					

STUDENT-STUDENT INTERACTION DURING ASSESSMENT

14. Indicate the level of satisfaction in relation to your students' learning achievements while doing cooperative work during online classes

	Very satisfying	Satisfying	Neutral	Unsatisfying	Very unsatisfying
Senior and junior students (from 5 th to 8 th semester)					
First- years and sophomore-year students (from 1 st to 4 th semester)					

THREATS TO STUDENTS ASSESSMENT IN ONLINE EDUCATION

15. Choose the factor(s) that you consider threatened the assessment of students during online classes

- Bad internet connection
- Malfunctioning of digital platforms or tools
- Malfunctioning/lack of technological devices
- Students' emotional health
- Students' physical health
- Environmental factors (e.g., background noise, family interruptions)
- Lack of direct interaction with peers and teachers

Other _____

