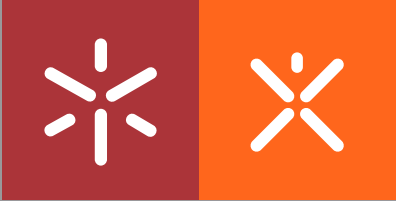


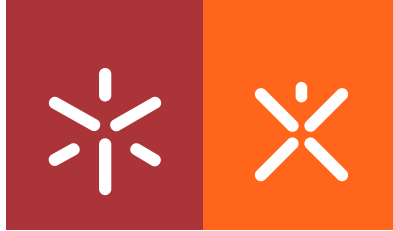


Jorge Hamilton Leal Cevallos

**Teachers and Students' Perspectives of
Assessment in Secondary Education:
A Mixed-method Study in Ecuador**

Universidade do Minho
Instituto de Educação





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**Teachers and Students' Perspectives of
Assessment in Secondary Education:
A Mixed-method Study in Ecuador**

Doctoral Thesis
Doctoral Degree in Educational Sciences
Speciality in Curriculum Development

Thesis developed under the supervision of
Professor Doctor Maria Assunção Flores Fernandes

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STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

I further declare that I have fully acknowledged the Code of Ethical Conduct of the University of Minho.

ABSTRACT

Title: Teachers and Students' Perspectives of Assessment in Secondary Education: A mixed-method study in Ecuador

This research explores assessment in Ecuadorian secondary public education, focusing on the conceptions and practices of students, teachers, and school leaders, including the impact of the COVID-19 pandemic. The study was conducted in 38 public schools using a mixed-methods approach. This research comprises six studies. Sub-study 1 involved 229 teachers and employed Confirmatory Factor Analysis (CFA) which resulted in a non-hierarchical model with four correlated first-order factors: *Improvement*, *Irrelevance*, *School Accountability*, and *Student Accountability*. Sub-study 2 examined the views of 23 school leaders through semi-structured interviews, revealing a formative approach to assessment, although hindered by contextual barriers. Sub-studies 3 and 4 focused on 996 final-year secondary students. Sub-study 3 applied CFA to explore students' conceptions of assessment, resulting in a model with eight correlated factors, with strong associations between assessment and improvement. Six models were tested. Sub-study 4 analyzed students' general views, showing that assessment is closely linked to learning, with tests and exams perceived as the most effective methods. Sub-studies 5 and 6 addressed experiences during the COVID-19 pandemic. Sub-study 5, based on teacher questionnaires, found that assessment remained relevant despite reduced diversity in tools; portfolios, multiple-choice tests, and projects were commonly used. Teachers also implemented strategies to overcome technological and pedagogical challenges. Sub-study 6 explored students' experiences, highlighting the continuity of assessment during remote education, though its effectiveness was questioned. Students appreciated increased feedback and teacher support. The findings contribute to the understanding of assessment in secondary education and suggest areas for further research, particularly in improving contextualized and equitable assessment practices.

Keywords: Assessment of learning, Conceptions of assessment, Perspectives of assessment, Practices, Secondary education.

RESUMO

Título: Perspetivas de avaliação de professores e alunos do Ensino Secundário no Equador: Um estudo misto no Equador

Esta investigação explora a avaliação no ensino secundário público equatoriano, com foco nas conceções e práticas de alunos, professores e líderes escolares, incluindo o impacto da pandemia da COVID-19. O estudo foi realizado em 38 escolas públicas utilizando uma abordagem de métodos mistos. Esta investigação compreende seis estudos. O sub-estudo 1 envolveu 229 professores e empregou a Análise Fatorial Confirmatória (AFC), que resultou num modelo não hierárquico com quatro fatores correlacionados de primeira ordem: Melhoria, Irrelevância, Responsabilidade Escolar e Responsabilidade do Aluno. O sub-estudo 2 examinou as opiniões de 23 líderes escolares por meio de entrevistas semiestruturadas, revelando uma abordagem formativa à avaliação, embora prejudicada por barreiras contextuais. Os sub-estudos 3 e 4 focaram em 996 alunos do último ano do ensino secundário. O sub-estudo 3 aplicou a CFA para explorar as conceções dos alunos sobre avaliação, resultando num modelo com oito fatores correlacionados, com fortes associações entre avaliação e melhoria. Seis modelos foram testados. O sub-estudo 4 analisou as opiniões gerais dos alunos, mostrando que a avaliação está intimamente ligada à aprendizagem, com testes e exames percebidos como os métodos mais eficazes. Os sub-estudos 5 e 6 abordaram as experiências durante a pandemia da COVID-19. O sub-estudo 5, baseado em questionários aos professores, constatou que a avaliação continuou a ser relevante, apesar da redução da diversidade de ferramentas; portfólios, testes de escolha múltipla e projetos foram comumente utilizados. Os professores também implementaram estratégias para superar desafios tecnológicos e pedagógicos. O sub-estudo 6 explorou as experiências dos alunos, destacando a continuidade da avaliação durante o ensino à distância, embora a sua eficácia tenha sido questionada. Os alunos apreciaram o aumento do feedback e do apoio dos professores. As conclusões contribuem para a compreensão da avaliação no ensino secundário e sugerem áreas para investigação futura, particularmente na melhoria de práticas de avaliação contextualizadas e equitativas.

Palavras-chave: Avaliação das aprendizagens, Conceções de avaliação, Ensino Secundário, Perspetivas de avaliação, Práticas.

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A la memoria de mi sobrino Clark José “papucho”.

INTRODUCTION

Introduction

For more than one decade, the compulsory educational system of Ecuador has gone through several changes in order to face the challenges that come with the globalization and the demands for quality education as established in the sustainable development goal 4. The look for these objectives especially has involved the creation of learning standards and a constant reorganization and updating of the curriculum for all levels of education. It is imperative to get to know about the reality of teaching and assessment practices in Ecuadorian educational system, mainly from the perspectives of secondary education teachers and students. In this context, it will be possible to know what the changes are and how those changes are instigated and enacted.

Ecuadorian curriculum guidelines advocate for the implementation of learning process centered in the students based on the values of justice, solidarity and innovation. However, education in Ecuador faces the challenge of allowing pupils to be active participants in the knowledge society (UNESCO, 2016). In this sense, because the curriculum goes through changes (OECD, 2018; UNESCO, 2022), innovative assessment practices have been advocated. According to Attard et al. (2010),

“The best forms of assessment need to be aligned with set learning goals. Thus forms of assessment need to be used that show evidence of student achievement of the set learning outcomes. Otherwise students will not take such goals seriously. In addition, students should be clearly informed about the assessment strategy being used for their program, what examinations or other assessment methods they will be subjected to, what will be expected of them and the criteria that will be applied to the assessment of their performance” (p.31)

However, for secondary education teachers it is difficult to implement this framework because students tend to seek direct and closed instructions, in an effort to meet the instructor's expectations. Such a view supports the assumption that the students adapt their behavior according to the way and moments in which assessment is implemented.

The conceptions that teachers and students have about learning, teaching and assessment impact on how they behave in their classrooms. Conceptions are conceived as the values human beings develop through their experiences and application to assess the other constructs like actions of other people or an activity (Eggen & Kauchak, 2001). Thus, teachers' conceptions of assessment are a pivotal construct for teachers' assessment practices. However, research literature has evidenced that even if teachers hold positive views of assessment and perceive the benefits of assessment for

themselves and for their pupils, they generally strive to transmit their views into classroom-based practices (Heitink et. al., 2016).

Despite assessment has become an integral element of effective teaching and learning, which mediates the interaction between teachers and students in the classroom, with the final objective of enhancing teaching and learning (Black & Wiliam, 2010; Brookhart, 2011), in the Ecuadorian context only one research has been conducted on assessment conceptions and practices by Brown and Remesal (2017). The authors showed that Ecuadorian teachers' conceptions of assessment are rooted with the beliefs that identify educators that belong to high stakes contexts. In this sense, more research is needed to go deeper and beyond the views of the teachers about the purpose of educational assessment. Thus, involvement of other participants such as the students is required to explore their conceptions of assessment.

Based on the assumptions presented, the motivation to carry out this research is due mainly to the intention to continue the research initially carried out Brown and Remesal (2017) and to try to respond to the research gaps in the field of assessment, through the voices of teachers and students regarding their perceptions and practices about the assessment process in secondary public education. Therefore, the present research work aims, in general, to contribute to the improvement of the quality of teaching, learning and assessment processes in secondary education. For this purpose, thirty- eight public secondary schools were included, through third year of "bachillerato" teachers' and students' perceptions. The inclusion of last year school teachers and students aimed at obtaining a broad view of a multiplicity of perceptions from the participants. This research focuses mainly on assessment in secondary education taking also into account the dimensions of learning and teaching. The following objectives were identified:

- To get to know the conceptions of assessment of Ecuadorian teachers from secondary public Education;
- To get to know the perceptions of secondary school directors and sub-directors about teaching, learning and assessment in Ecuador;
- To get to know the conceptions of assessment of Ecuadorian students from secondary public education;
- To identify the most associated ideas with assessment from the point of view of Ecuadorian students in secondary education;

- To get to know teachers' views of online learning as a result of the forced closure of the institutions during the Covid-19 pandemic in secondary public education in Ecuador;
- To get to know students' views on online learning as a result of the forced closure of the institutions during the Covid-19 pandemic in secondary public education in Ecuador.

To achieve these objectives a methodological research plan was designed in order to implement the research regarding the collection and analysis of data. The motivation for carrying out this work was related to the collection of data in the secondary public schools of Ecuador in order to understand the assessment process in this context, as well as to identify complementary information. Accordingly, thirty- eight secondary schools were studied, covering specifically the teachers and students from the third year of "bachillerato" and directors and sub-directors through their perceptions and practices of assessment. Regarding directors and sub-directors' view of assessment, it was only possible to collect data on twenty- three of them due to the constraints of COVID-19 and lack of availability of the participants. The structure of this work consists of nine chapters.

The first chapter is intended to describe the conceptual framework of the research, theoretically and conceptually contextualizing the research topic based on a literature review. The first chapter starts presenting the historical context of evaluation according to different models in order to understand how the different periods in history and the economic, social and political factors influenced the evaluation within a particular paradigm. In addition, the first chapter presents the conceptualization of assessment in terms of conceptions, functions, approaches, and methods. Furthermore, the main perspectives of the stakeholders are highlighted in terms of conceptions of assessment and the different views of international and national literature are analyzed and discussed. The discussion of traditional vs alternative methods of assessment is also included.

In chapter two the framework of the research is presented as well as the research questions and objectives, research design, methods and procedures for the data collection and analysis are described. The detailed account of the six studies is also done including the participants as well as data collection and data analysis of each study. Ethical considerations, access to the context and challenges and limitations of the broad study are also addressed in this chapter. Also, in this chapter the context of the study is described.

The rest of the thesis concerns the presentation of the empirical data comprising the last six chapters. Thus, chapter three analyzes the teachers' conceptions of assessment in order to get to know how they look at assessment. Data of this study were collected through a questionnaire with 229

teachers from thirty-eight secondary public education schools. Also, Confirmatory Factor Analysis was implemented.

Chapter four focuses on data collected through individual interviews with directors and sub-directors from secondary schools in Ecuador. It addresses their perceptions about learning and assessment, the key challenges as well as improvements to be developed in assessment in secondary public education from the perspective of the directors and sub-directors. Findings are presented according to the emerging themes arising from the data analysis: a) assessment; b) articulation between assessment and the teaching and learning process; c) being a teacher in secondary education; and d) feedback.

Chapter three analyzes the students' conceptions of assessment in order to get to know how they look at assessment. Data of this study were collected through a questionnaire with 996 last year school students from thirty-eight secondary public education schools. Also, Confirmatory Factor Analysis was implemented.

Chapter six focuses on students' views of assessment and presents data collected through questionnaires administered to students in Ecuador. Data about the ideas that students in third year of "bachillerato" most associate with assessment, their perspective about the effectiveness, fairness, influence and time of assessment are presented.

Chapter seven focuses on teachers' views of assessment during the COVID-19 pandemic. This sub-study was developed particularly to get to know the degree of importance assigned to the types of assessment (diagnostic, formative, summative); the frequency of feedback given to the students during distance assessment in contrast to face-to-face assessment; the participation of the students in self/peer evaluation during distance assessment in contrast to face-to-face assessment; the diversity of instruments for the collection of information during distance assessment in contrast to face-to-face assessment; and the recurrence of using a group of instruments during distance assessment. In addition, the results of four open-ended questions are presented on the tools and strategies that teachers recommend and do not recommend to their colleagues for online/distance teaching; the difficulties faced by teachers during distance assessment; and who they turned to overcome these difficulties.

Chapter seven focuses on students' views of assessment during the COVID-19 pandemic. This sub-study was developed particularly to investigate student perceptions about assessment (implementation and effectiveness) and feedback (implementation, type and frequency), especially the ways they are put into practice during the online context.

This work ends with the presentation of the conclusions and implications, seeking to respond to the initial research questions. In this final section suggestions for future research are also identified concerning different issues in the field of assessment in secondary public education.

CHAPTER I

ASSESSMENT AND EVALUATION: HISTORICAL PERSPECTIVES, CONCEPTIONS AND APPROACHES

Chapter I - Assessment and Evaluation: Historical Perspectives, Conceptions and Approaches

This chapter explores the concept of assessment considering its conceptual framework, conceptions and modes of assessment, assessment approaches, assessment methods, and feedback. The aim is to develop the framework that will constitute the basis for analysis since its focus is of great significance to the scope of the research presented in this dissertation.

1.1. Conceptual Framework

1.1.1. Historical Context of Evaluation

We draw upon the works of Alcaraz (2015); Oliveira (2014); and Pereira (2016), to present an analysis of the evolution process of evaluation, which is distinguished by Guba & Lincoln (1989) into four generations:

***Evaluation as Measurement:** Rooted in Taylorism and characterized by quantitative results.

*** Evaluation as a Description.** From here is that Ralph Tyler introduced the term “educational evaluation” during this phase, which was identified by its focus on objective-based results.

*** Evaluation as Value Judgment:** In this context, evaluation and value judgment are integrated. Fernandes (2008) asserts that evaluation, during this generation, should serve as a mean to monitor and make decisions in the instructional process. Evaluation results should extend beyond student exams and encompass all members of the educational community. The evaluation process should consider all components of teaching and learning and define criteria to account for the relevance and importance attributed to evaluation objectives.

*** Evaluation as Construction:** Fernandes (2008) describes this generation as related to constructivism, wherein educators need to transition from implementing and using different strategies, techniques, and assessment instruments to an integrated evaluation process. Educators should be able to share the possibility of evaluation with students and other participants.

Stufflebeam & Shinkfield (2011) present a second Historical perspective on the evolution of evaluation, which is categorized into four eras. They highlight that their description results from a previous analysis called “*Evaluation Models*,” developed by Madaus, Scriven & Stufflebeam (1983).

The Pre-Tylerian Period: This is the term that the authors call to the time preceding the four eras. In the previous time to 1930, some form of evaluation was already known. Stufflebeam & Shinkfield (2011) argue that the need to evaluate people and their procedures began in 200 B.C., extending into the 20th century. From this point, the researchers identified a series of events ranging from ancient

Chinese authorities implementing evaluation of social services; Greek masters including Socrates applying evaluative surveys as components of their methodology in the 5th century B.C., the monarchy of London delegating commissioners to evaluate their public services in the 19th century; In the United States of America, it was Horace Mann who in 1845 developed an evaluation process based on performance test in Boston schools. Forty years later, exactly between 1887 and 1898, Joshep Rice carried out a study with the objective of evaluating the degree of knowledge of spelling of 33. 000 students. In this context, the work developed by Rice is recognized as the first formal evaluation process in America. Additionally, the movements for educational accreditation were established along with standardized tests.

In the following paragraphs Stufflebeam & Shinkfield (2011) present additional evidence on the history of assessment.

a) The Tylerian Era (1930-1945) – It was in the 1930s that Ralph Tyler coined the term educational evaluation through his work. Tyler is recognized for his work on curriculum and assessment. The main attributes of Tyler´s work focused on clearly formulated objectives, with evaluation determining whether these objectives had been achieved. Objectives became the foundation for curriculum design. During the Great Depression in the United States of America, a group of people led by John Dewey implemented the Progressive Education Movement aimed at transforming education into a system of dynamism and innovation. Ralph Tyler became an active member of this movement and together with Smith developed the famous “Eight-Year Study”, which was designed to evaluate the effectiveness of innovative curricula and teaching strategies in 30 schools located in different parts of the United States. This helped Tyler to disseminate his conceptions of educational evaluation in the educational context.

b) The Era of Innocence (1946-1957) - This period is characterized by the end of the Great Depression which brought abundance and prosperity. The Educational offer was expanded structurally and schooling increased. Although there were some manifestations on evaluation, no improvements were seen in the educational system in this aspect. During this time, emphasis was given to the study and development of evaluation instruments, taxonomies of objectives, experimental models, and statistical procedures from a theoretical perspective but not in practice.

c) The Realism era (1958-1972) - New state-funded curricular programs appeared, which led to significant changes with respect to assessment. In contrast, assessment experts realized that their work was not achieving the desired effectiveness and that the instruments and strategies they were using were not compatible. For example, assessment experts noted that the application of standardized tests

ran counter to Tyler's method. Reflecting these difficulties and gaps in evaluation, new theories, methods, and programs for the training of evaluators appeared. Criterion-based tests appeared as an alternative to normative tests.

d) The Professionalism Era (1973 to the present) - Evaluation reaches a deep incorporation as a discipline of knowledge and professionalization. In this period the role of the evaluator had already been established. In this sense, evaluators could share experiences with their colleagues, causing the appearance of an interesting production of literature based on educational evaluation and the creation of projects and centers dedicated to evaluation in the United States. The integration of twelve professional organizations to form the Joint Committee in 1981 brought about the establishment of norms and standards for evaluation. These significant improvements have influenced the area of educational evaluation and also communication. As can be seen, the consolidation of evaluation as an educational field and profession is evident, however, more research is needed in the educational area due to its non-stationary nature. According to Flores, Machado & Alves (2017), this has turned evaluation into a complex and not very consensual issue that has attracted the attention of various academic members of the educational community, political agents, and other internal and external actors interested in education.

Pereira (2016) summarizes, in the following table, the historical evolution on evaluation described from the perspectives of Guba & Lincoln (1989) and Stufflebeam & Shinkfield (2011).

Figure 1:

The historical evolution of evaluations described from the perspectives of Guba & Lincoln (1989) and Stufflebeam & Shinkfield (2011)

Historical Perspectives of Evaluation				
Generations (Guba & Lincoln, 1989)	Eras (Stufflebeam & Shinkfield, 2011)	Objectives of Evaluation	Role of the Student	Role of the Evaluator
First Generation	The pre-Tylerian Era	To Measure	Is measured	To Measure
Second Generation	The Tylerian Era	To Describe	Is seen as an	To Describe
Third Generation	The Realism Era	To Judge	instrument	To Judge
Fourth Generation	The Professionalism Era	To Understand	With a passive role With an active role	To Change

1.1.2. Conceptualizing Assessment

In the educational context the term “Assessment” was initially used in 1970’s; before this, “evaluation”, “testing” and “examining” were used (Heywood, 2000). From here, it is acknowledged that “Evaluation is the process of obtaining information and using it to make judgments that will be used to make decisions” (Tenbrink, 1988, p.19). Along the same lines, Pacheco (2007) affirms that evaluation “is presented as a process of obtaining information, making judgments and making decisions whatever perspective we adopt” (p.129). In this sense, it is recognized that assessment is immersed in every curriculum (Rajić, 2017), it is one of the essential components of the curriculum (Sanmartí & García, 1999) and it refers to “all those activities undertaken by teachers— and by students in assessing themselves—that provide information to be used as feedback to modify teaching and learning activities” (Black & Wiliam, 1998, p. 140). “Without changing the evaluation, the curricular changes will have few significance” (Sanmartí & García,1999, p.265). The latter makes us realize that classroom assessment is a crucial element in educational systems, as the way in which assessment is implemented influences instructional settings (Wiliam, 2011). Thus, assessment becomes the highest conditional variable for the development and implementation of a curriculum (Sanmartí & García,1999).

On the other hand, Ribeiro (1997) states that "evaluation is a descriptive and informative operation in the means it employs, formative in the intention that presides over it and independent of classification" (p. 75). Moreover, evaluation emerges within the teaching-learning process. In this perspective, it is related to determining the achievement of educational objectives (Cardinet,1993). In this context, Flores, Machado & Alves (2017) argue that "assessment has come to assume an undeniable centrality in educational and curricular policies, and in the way teachers position themselves in the process of curriculum development" (p. 7), since the way assessment is applied impacts instructional contexts (Wiliam, 2011). Pacheco (2001, p. 128) claims that evaluation is a controversial point “which should be studied in scientific-technical and socio-political dimensions, because it involves evaluating technical processes that are theoretically justified and concerns are rooted in policies that determine it”. It is also highlighted in the literature that, assessment practices are one of the clearest indices of the relationship between school and society since they provide for communication between the two (Broadfoot, 1979). Existing literature points to evaluation as a dynamic process: “This dynamic feature of the evaluation as a science results in different conceptions, which are associated with the historical moments that characterize it and with different perceptions of experts in the field of evaluation influenced by different literary perspectives as the Francophone’s, the Anglo-Saxon, the American, among others” (Pereira,2016, p.23).

1.1.3. Conceptions of assessment

The term conception is regarded as the general, often implicit, understanding a person has about the nature of a phenomenon (Thompson, 1992; Brown, 2008). This includes the ideas, values and attitudes people hold about what something is (its structure) and its purpose (Brown & Gao, 2015). Conceptions develop gradually through experiences of the phenomenon over the course of one's life and careers, particularly for teachers, from their time as learners (Pajares, 1992; Brown & Gao, 2015). They also shape how a person reacts or responds to the phenomenon (Pajares, 1992; Ajzen, 2005; Fives & Buehl, 2012) and which describes complex and difficult categories of experience (White, 1994) such as assessment (Brown & Hirschfield, 2007). Essentially a conception is the set of values people form through their experiences, which they use to evaluate other constructs like the actions of other people or an activity (Eggen & Kauchak, 2001; Izci & Caliskan, 2017).

Van den berg (2002) asserted that conceptions link to shared social and cultural shared experiences, indicating that they shape the way a person describes his/her work (Nespor, 1987) including teachers' teaching and students' learning (Calderhead, 1996; Pajares, 1992). In this sense, "examining students' attitudes towards assessment purposes may help us uncover important factors in what students do before, during, and after assessment" (Brown et al, 2009, p. 9). Moreover, research about how teachers' conceptions of assessment are presented in today's classroom practices can provide valuable information regarding the teachers, for example, "concerning the professional assessment competence of the teacher" (Tesorio & Canizares, 2018, p. 65).

The term conception includes attitudes, perceptions, dispositions, and more terminologies that suggest beliefs regarding a phenomenon (Brown & Hirschfeld, 2008; Deneen & Brown, 2016). Beliefs correspond to a subcategory of conceptions that in the context of assessment, for instance, describe the general perception and awareness teachers have about assessment (Li & Hui, 2007; Barnes, Fives & Dacey, 2015; Opre, 2015). It is also important to keep in mind that beliefs do not occur within a vacuum (Rieskamp & Reimer, 2007). Beliefs about phenomena tend to be different depending on the environmental conditions that are imposed on the phenomenon. For example, research findings into teacher conceptions of assessment have shown diverse patterns of association between assessment for improved learning and assessment for school accountability in several countries around the world (Harris & Brown, 2009). To sum up, "there is indeed no single global model. Context, culture, and local factors shape teacher conceptions of assessment" (Brown et al, 2019, p. 1).

Some studies reveal how teachers think about teaching, learning, knowledge, and curriculum (Bennett, 2011; Fives & Buehl, 2012). Scientific research has begun to show interest in teachers'

points of view about the nature and purpose of assessment. The purposes of people concerning the phenomena are declared in their conceptions of the phenomena (Brown & Hirschfeld, 2007). Clear emerging data indicates that assessment outcomes and practices may be shaped by teachers' conceptions of assessment (Barnes, Fives, & Dacey 2015; Fulmer, Lee, & Tan, 2015; Deneen & Brown, 2016). For instance, the idea that assessment should be "formative" rather than "summative" commonly denotes assessment would be used to improve teaching and learning and not give students final marks or scores (Brown & Hirschfeld, 2007).

Scientific research highlighted that different types of teaching cultures promote diverse conceptions and practices connected to assessment (Segers & Tillema, 2011). Similarly, Brown et al. (2011) state that the culture of assessment, meaning the practices and policies applied in the teaching context, marks the way teachers' conceptions of teaching, and assessment are designed (Brown, 2004; Postareff, Virtanen, Katajavuori, & Lindblom-Ylänne, 2012). Assessment is based on the premise that these conceptions, like other beliefs of the teachers, have a significant impact on their decisions and professional practice (Vandeyar & Killen, 2007; Brown, 2008; Opre, 2015). The conceptions of several aspects of the educational process (e.g., teaching, learning, and curriculum) have a strong influence on how teachers provide instruction and what pupils learn or accomplish (Thompson, 1992; Calderhead, 1996; Brown, Lake, & Matters, 2011). Definitely, teachers' beliefs about students, the teaching and learning process, and subjects determine the techniques and practices of assessment (Cizek, Fitzgerald, Shawn, & Rachor, 1995). It was concluded that teacher beliefs, attitudes, and reactions affect – to the degree teachers have control – the quality of what occurs in the school's curriculum, teaching, and assessment (Fives & Buehl, 2012).

The results of research studies have shown a strong relationship involving conceptions of assessment and classroom practice (see Van den Berg, 2002; Remesal, 2007; Brown & Remesal, 2012). The pedagogical practice in the classroom is determined by how instructors interpret the purpose and function of assessment. Whilst employing assessment for improving teaching and learning should be a *sine qua non* of being a teacher, the operationalization of this belief rests on the sociocultural context and regulatory framework within which teachers interact (Brown et al, 2019). Additional studies (see Sato & Kleinsasser, 2004; Brown & Hirschfeld, 2007) showed that teachers' conceptions are a necessary variable when adopting classroom decisions. According to Gebriel (2017), findings from several research studies underline the usefulness of assuming teacher beliefs if we wish to improve, adapt, or completely change classroom practices.

As a matter of fact, the link between beliefs/conceptions, and school practices has been well-known for a long time (Remesal, 2011). Conceptions are strongly linked to practice (Pajares, 1992); produced in the day-to-day involvement, and returned to it as resolutions and behaviors (Remesal, 2011). Griffiths, Gore, and Ladwig (2006) state that beliefs shape teaching practices to a greater dimension than teaching experience and socioeconomic school conditions do. Besides, beliefs are not always coherent or clearly expressed (Clark & Peterson, 1986; Calderhead, 1996). Further, they frequently encounter challenges, which can either drive their progress or impede their efforts due to various legal and contextual requirements (Harris & Brown, 2009; Remesal, 2011).

Understandably, the greater the similarity of a phenomenon's structure and functions across time or place the more likely individuals from diverse locations or cultural contexts will have similar conceptions of that phenomenon. Consequently, it is presented as a reasonable assumption that teachers may hold identical conceptions of assessment depending on whether the evaluative or improvement functions are prioritized within a policy context (Brown & Gao, 2015). Teacher beliefs about assessment are commonly altered by the social and cultural components in a specific context and subsequently, conceptions of assessment may be distinguished as ecologically rational (Brown & Michaelides 2011; Gebril, 2017).

According to Hidalgo and Murillo (2017), “the study of assessment’ conceptions has gained strength in recent decades” (p.107). As a result, the development of research studies focused on assessment conceptions has explored how teachers in several latitudes of the world perceive assessment, involving participants of different languages and cultural contexts. Brown et al. (2019) sorted assessment contexts as low-stakes (e.g., New Zealand, Queensland, Cyprus, and Catalonia) and high-stakes (e.g., Hong Kong, China, Iran, Egypt, India, and Ecuador). In this sense, a plethora of studies have been implemented in many nations and/or regions. for instance, New Zealand (Brown, 2002, 2004, 2008, 2011), Queensland (Brown, Lake, & Matters, 2011), Australia (Brown, Lake, & Matters, 2011), and the USA (Hamilton, Stecher, & Marsh, 2007; Calveric, 2010). Other studies have been carried out in the Asian context in China (Li & Hui, 2007) and Hong Kong (Brown et al., 2009).

In Europe, research on conceptions of assessment has been done in Portugal (Flores et al., 2019; Flores et al., 2020), Spain (Brown & Remesal, 2012), the Netherlands (Segers & Tillema, 2011), and Cyprus (Brown & Michaelides, 2011) and recently extended to Middle Eastern societies in a range of Islamic societies including Israel (Levy-Vered & Alhija, 2018), Egypt (Gebriel & Brown, 2014), Turkey (Vardar, 2010), Iran (Pishghadam & Shayesteh, 2012; Pishghadam et al., 2014), and Pakistan (Khan, 2011). Two studies were also undertaken in Latin America, one in Ecuador (Brown & Remesal, 2017),

and another in Colombia (Muñoz et al., 2012). Such strong demand denotes that the inventory has some efficiency and feasibility as an exploratory method that is capable of providing a specification of existing teachers' beliefs regarding assessment (Gebriel & Brown, 2014). This fact is very important, since knowing how assessment is conceived by teachers may serve to improve their assessment practices (Brown et al, 2019).

Teachers from Australia and New Zealand appear to have the same conceptions of assessment (Brown et al., 2011), which is explained by the similarities between the two countries. In the United States of America, attitudes toward standards-based assessment between the states of California, Georgia, and Pennsylvania were demonstrated to be similar, which can be justified by the educational systems/policies that follow identical regulations (Hamilton et al, 2007; Gebriel, 2017).

Teachers' conceptions of assessment

Recent research on teacher conceptions of assessment (Barnes, Fives & Dacey, 2015; Fulmer, Lee, & Tan, 2015; Bonner, 2016; Brown & Remesal, 2017) highlights the crucial importance of the nature of beliefs and conceptions teachers hold about assessment because the success of assessment policies may fail due to the absence of teacher cooperation, knowledge, or belief in the intended new use of assessment (Brown, Lake, & Matters, 2011; Gebriel, 2017). It is acknowledged that teachers are at the core of any educational system and are key elements in adjusting assessment data to improve learning outcomes (Brown et al., 2009; Pishghadam et al., 2014).

Teachers' beliefs are complicated, versatile, and mixed whereby diverse belief systems may work in many ways such as filters, structures, or manuals (Fives & Buehl, 2012). At this point, conceptions of assessment refer to the teacher's understanding of the nature and purpose of how students' learning is examined, verified, questioned, or assessed (Brown & Gao, 2015; Levy-Vered & Alhija, 2018).

Existing literature underlines how challenging is the implementation of new forms of assessment, and especially those aimed at promoting assessment for learning (Stiggins, 2005; Black & Wiliam, 2009; Brown, Lake, & Matters, 2011; Remesal, 2011). As the years passed, extensive research studies have been developed in the field of teacher assessment practices and, more precisely, concerning appraising practices, rather than the beliefs that possibly would determine these practices (McMillan & Nash, 2000; McMillan, 2001; Vandeyar, & Killen, 2007; Duncan & Noonan, 2007; Brown et al., 2011; Brown, Lake, & Matters, 2011). Nevertheless, the conclusions of these investigations draw attention to teachers' beliefs or conceptions. Findings present teachers' conceptions as one of the key elements that induce classroom choices (Sato & Kleinsasser, 2004; Remesal, 2006; Griffiths, Gore, & Ladwig, 2006). This is mainly crucial in times of educational system reforms since schoolteachers are

the closing chapter in a whole series of changes (Remesal, 2011). Teachers' conceptions of pedagogical processes are the result of their instructional experiences as students, strongly advising that the same conceptions can be found in both teachers and learners (Pajares, 1992; Brown & Hirschfeld, 2007).

In the practice of assessment practice, how teachers conceptualize assessment itself is pivotal. Teachers' conceptions regarding the purposes of assessment determine the application of assessment practices at all levels of the educational field (Brookhart, 2011; Deneen & Boud, 2014; Barnes, Fives, & Dacey, 2015; Fulmer, Lee, & Tan, 2015; Deneen & Brown, 2016). Affirmative conceptions of assessment (e.g., assessment should increase students' learning) have been shown to promote valuable assessment practices; negative conceptions of assessment (e.g., assessment is bad for students or irrelevant to learning) may represent a critical role in teachers avoiding or disrupting assessment policies and expected practices (Brown, 2008; Deneen & Boud, 2014; Deneen & Brown, 2016). Commonly, investigation interested in teacher conceptions of assessment has concentrated on the tensions between different functions and purposes, like a summary of accomplishment, enhancement (learning and teaching), and accountability of the educational institution (Black & William, 1998; Levy-Vered & Alhija, 2018).

A study of the literature displays that the problem of teacher beliefs concerning teaching, learning, curriculum, and diverse disciplines has been investigated by scholars with preference, and for more than twenty years it has been done (Thompson, 1992; Fives, Lacatena & Gerard, 2015). For example, Delanshere and Jones (1999) suggested three dimensions for the identification and description of teachers' beliefs on assessment. These dimensions are (i) purposes and functions of assessment, detailed as the distribution of pupils based on the levels of achievement and external evaluation; (ii) teachers' perception of curriculum and their professional self-efficacy feeling; and (iii) their beliefs about the pedagogical process and students as active subjects developing knowledge and skills (Remesal, 2011).

A previous presentation about the conceptions of assessment made by Wolf et al (1991) proposed to make a distinction between two opposite sides in a continuum: the "assessment culture" and the "testing culture"; the notions that teachers embrace about intelligence, about the pedagogical process, the nature of assessment activities, and about the criteria of evaluation, eventually determine their knowledge and practices of assessment (Remesal, 2011). Teachers' beliefs about assessment, teaching, learning, and curriculum have presented marked similarities in the societies that put teacher

judgment and professionalism first as the fundamental of teacher activity in each of the four domains (Gebril & Brown, 2014).

Contrastingly, the exploration of teachers' assessment conceptions has emerged relatively recently (Brown, 2004, 2006, 2008, 2011; Harris & Brown, 2009; Brown & Michaelides, 2011; Remesal, 2011; Barnes, Fives & Dacey, 2015; Flores et al., 2019; Fernandes, 2020) and it happens as a result of the paradigm shift in the approach and understanding of teaching and learning. The studies on the conceptions of assessment provide significant contributions to the circumstances of how teachers consider assessment and how these beliefs frame their teaching performance (Opre, 2015).

Taking as reference the study where Remesal (2011) developed her research with 50 teachers, it is argued by the author that assessment conceptions may, from one angle, be linked to the framework of the educational system and could tend towards more pedagogical conceptions or more of responsibility that relates to external aspects of the educational institution and, on the other hand, be compounded by diverse beliefs, at times discordant, about the role of assessment in teaching and learning contemplated independently. This reality can support understanding based on the difficulties related to the implementation of novel learning assessment practices (Pinheiro, 2022).

Diverse concepts about the purposes of assessment originate from debates on best assessment practices. There seem to be four main conceptions about the purpose of assessment presented in the published research (Torrance & Pryor, 1998; Shohamy, 2001; Brown, 2008). Three of them can generally be sorted as "purposes, while one can be described as an "antipurpose" (Brown, 2008; Brown, Lake, & Matters, 2011) (see Figure 2):

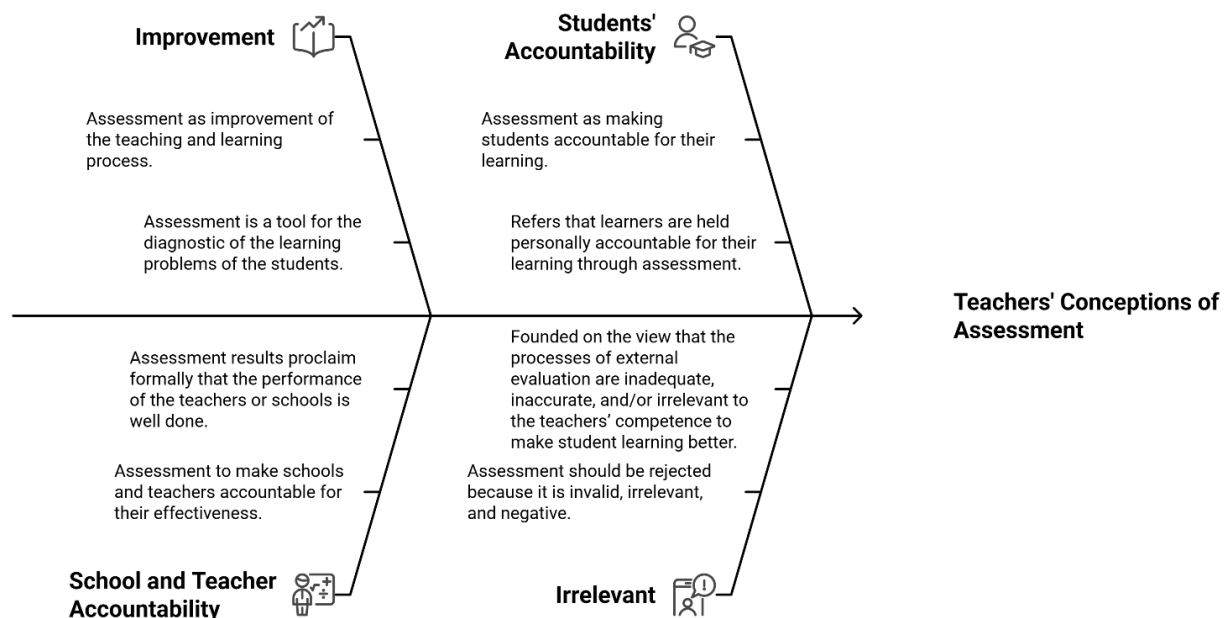
- i) Assessment as improvement of the teaching and learning process – Improvement. It refers to assessment as a tool for the diagnostic of the learning problems of the students (Levy-Vered & Alhija, 2018). At times acknowledged as an assessment for learning or formative assessment, has been proven to positively affect educational outcomes (Black & Wiliam, 1998; Popham, 2000). Formative assessment, using a large variety of assessment techniques and strategies, is implemented by instructors and schools during the pedagogical process in order to improve the learning outcomes of the learner and the instructional practices of teachers (Scriven, 1991). Moreover, Black, Harrison, & Lee (2003) emphasize that assessment results can serve as reflective tools that allow teachers to evaluate and refine their pedagogical practice (Black, Harrison, & Lee, 2003);
- ii) Assessment to make schools and teachers accountable for their effectiveness – Accountability of the School and the Teachers. This conception uses the results from

assessment to proclaim formally that the performance of the teachers or schools is well done (Butterfield, Williams, & Marr, 1999; Smith, Heinecke, & Noble, 1999) and determines consequences for educational institutions or teachers for the achievement or not of the expected standards (Firestone, Mayrowetz, & Fairman, 1998). There are rationales: publicly demonstrating that schools and teachers deliver quality instruction - this perspective asserts that, due to societal investment in education, schools and teachers are obligated to prove they are delivering a quality product (Gipps et al., 1995; Smith & Fey, 2000) and enlightening the quality of education – this perspective emphasizes the function testing can play in improving the roles of the teacher and the student (Noble & Smith, 1994; Linn, 2000; Porter & Chester, 2002);

- iii) Assessment as making students accountable for their learning – Students' Accountability (Brown, Lake & Matters, 2011). This idea refers that learners are held personally accountable for their learning through assessment (Brown, 2004; Harris & Brown, 2009; Brown, Lake & Matters, 2011). Marking, scoring, tests with criterion reference, and notifying certificates describe samples of this assessment in practice (Harris & Brown, 2008). Regarding this conception, grading does not notice the level of achievement and progress of the students during a learning continuum but is only interested in the students' position concerning other peers from the same age group (Musial, Nieminen, Thomas, & Burke, 2009). This concept finds if the students satisfy educational standards (Gebriel, 2017); and
- iv) The term anti-purpose refers to an idea that assessment is necessarily irrelevant to the contexts of life and career of the teachers and students – Irrelevant (Shohamy, 2001). This conception is founded on the view that the processes of external evaluation are inadequate, inaccurate, and/or irrelevant to the teachers' competence to make student learning better (Black & Wiliam, 2004; Harris & Brown, 2009; Brown, Lake, & Matters, 2011; Opre, 2015; Brown & Gao, 2015; Levy-Vered & Alhija, 2018).

Figure 2:

Brown's model of teachers' conceptions of assessment (Brown, 2008)



Students' conceptions of assessment

Students' understanding about the pedagogical processes is crucial because there is corroboration in how they realize those procedures transform their experiences in the educational context. The learners' motivation and the process of self-regulation of learning can be influenced by the conceptions and beliefs the students have about assessment (Zimmerman, 2008; Pereira, 2016) and have been determined to be substantially linked to academic accomplishment, in part, as a result of the convergence between such viewpoints and the self-regulation of learning (Brown, 2011; Flores et al., 2020). Furthermore, students who assume a commitment to learning commonly accomplish more (Reeve, Bolt, & Cai, 1999); while those who place control or assign obligation somewhere or who lack confidence to reach (Pajares, 1996) often obtain fewer achievements. In the educational context, the acquisition of knowledge by the learners is influenced by their conceptions of the educational environment as well as by the existing educational practices (Entwistle, 1991; Brown & Hirschfeld, 2007). Moreover, students' conceptions of assessment are highly relevant because assessment has a meaningful impact on the quality of knowledge acquisition (Entwistle & Entwistle, 1991; Marton & Säljö, 1997; Brown & Hirschfeld, 2007, 2008).

Students who conceived the assessment as more valid prepared themselves harder and developed more professional capabilities (Gulikers et al., 2008; Flores et. al., 2020) perceiving the assessment as an instrument for improvement indicates being a valuable self-regulating belief resulting in further academic achievement because self-regulation requests reflection upon achieved performance to recognize the learning needs and accomplishments. On the contrary, the assumption of an irrelevant and ignored assessment conveys inaccurate acknowledgments (e.g., attribution to an external locus of control) and the non-acceptance of the validity of either the evaluation process, findings, or feedback (Flores et. al., 2020). Research on conceptions of assessment is “of utmost relevance at a time when innovation of assessment practices is on the educational agenda” (Segers & Tillema, 2011, p. 53). Those conceptions lead to a diversity of attitudes and feelings in the continuum of assessment (Boud, 1995; Race, 1995; McMillan, 2016).

Emotions are entirely related to cognition, and a strong correlation exists between affective states and learning (Novak & Johnson, 2012; Lipnevich et al., 2021). Research studies have found that students experience positive and negative emotions in educational contexts (Novak & Johnson, 2012). Findings from research studies applying different data collections instruments interviews have determined that pupils experience with equal frequency both positive (e.g., enjoyment, satisfaction, hope, hope, pride, and relief) and negative emotions (e.g., anger, anxiety, shame, and boredom) in educational settings (e.g., Spangler, Pekrun, Kramer, & Hofmann, 2002). Feedback about accomplishment is part of the most important drivers of emotions in achievement settings (Goetz et al., 2018). Recent studies on assessment feedback report that emotional reactions are able to determine how the students perform in relation to feedback received (Pitt & Norton, 2017; Ryan & Henderson, 2018; Lipnevich et al., 2021). Emotions are undoubtedly changed in receiving feedback (Goetz et al., 2018; Jonsson & Panadero, 2018). According to Pekrun et al. (2023), “the feedback implied by grades is deemed to be particularly powerful” (p.2). In this context, longitudinal investigations of students' emotional responses through summative assessment found that only when scores were known (i.e., feedback was received) did students' emotions have systematic relationships with performance (Peterson et al., 2015; Flores et al., 2020).

Students have harder emotions than just anxiety regarding academic performance (Pekrun, Elliot, & Maier, 2006). It appears that as students become progressively realize the consequences assessments have for their lives, they develop less enthusiasm and more negativity towards assessment (Wang & Brown, 2014). The negative affective state response to the growing pressure of accountability (Lerner & Tetlock, 1999) applied through the assessment system may be ecologically

rational (Rieskamp & Reimer, 2007). Given the significant risks of performing poorly on exams, it appears logical—and may even act as a form of self-regulation—to derive less enjoyment from the process and consider the highly selective outcomes as inherently unfair (Wang & Brown, 2014).

Understanding the student's beliefs is essential while institutional policies and practices are reorganized, partially because students have a tendency to refuse innovations in the mechanisms used to judge, evaluate, or certify their academic achievements (Struyven & Devesa 2016; Flores et al., 2020). As educational policymakers seek to innovate in their assessment regimes in the educational system, students must believe such assessments contribute to improved outcomes. Disapproval of evaluative practices as irrelevant, inaccurate, or invalid would probably reduce the beneficial goal of using assessment for learning (Flores et al., 2020).

Students' conceptions of assessment are believed to change due to age and gender (Black et al., 2002). Moni, van Kraayenoord, & Baker (2002) argue the transitions experienced from primary to secondary school are acknowledged as the biggest. Also, from secondary to higher education (Thomas, Bol, & Warkentin, 1991), as a result of students encountering a variety of assessment purposes, routines, and procedures (Peterson, & Irving, 2006).

A decade ago, it was remarked, in an early volume of studies on student conceptions and experiences of assessment, that student voice is “remarkably absent” in the literature on assessment (Brown, McInerney et al. 2009, p. 5, as cited in Brown, 2022). A significant portion of the empirical work on conceptions of assessment has concentrated on compulsory education learners and how these conceptions affect students' behaviors and outcomes (Brown & Hirschfeld, 2008; Peterson & Irving 2008; Brown, 2009, 2011, 2013; Brown & Harris, 2012; Solomonidou & Michaelides 2017; Chen & Brown, 2018; Flores et al., 2020).

There is research evidence on students' conceptions regarding school improvement and evaluation of teaching, students' conceptions of their own assessment continue to be an under-researched area (Solomonidou & Michaelides, 2017). In other words, “the research literature on students' conceptions of assessment is not vast” (Brown & Hirschfeld, 2008, p.4). In this sense, if we expand our understanding about the conceptions students have about assessment, we will be in a better condition to design better assessments, those assessments that most appropriately match their needs and aspirations, and consequently help improve their learning (Murillo & Hidalgo, 2015; Brown, 2008; Ibarra-Sáiz & Rodríguez-Gómez, 2014; Rodríguez-Conde, Olmos-Migueláñez, & Nieto-Isidro, 2014, as cited in Murillo & Hidalgo, 2017).

On the other hand, research with higher education students does exist (Matos et al., 2009, 2013; Fletcher et al., 2012; Brown, 2013; Brown & Wang, 2013, 2016; Brown & Harris, 2014; Wang & Brown 2014; Flores et al., 2020, Pereira, Cadime, Brown, & Flores, 2021). Up to now the majority of the research studies in higher education associated with conceptions of assessment have focused on how these conceptions affect students' behaviors (e.g., Sambell & McDowell, 1998; Gijbels & Dochy, 2006), perceptions of assessment criteria, practices, or requirements (e.g., Sambell, McDowell, & Brown, 1997; Brookhart & Bronowicz, 2003), perceptions of the value and importance of assessment, or privileged mode of assessment (e.g., Birenbaum, 1994; Brookhart & Bronowicz, 2003; Peterson & Irving, 2006). "At the secondary school level multiple and conflicting conceptions of assessment have been reported" (Brown, Irving, Peterson, & Hirschfeld, 2009, p.98). However, prior research about Ecuadorian secondary school students' conceptions of assessment has not been developed in this country. In response to this deficit, the research gap needs to be closed, "because what students think about assessment mediates their learning and achievement and has consequences for how they participate in assessment tasks" (Monteiro et al., 2021, p. 2).

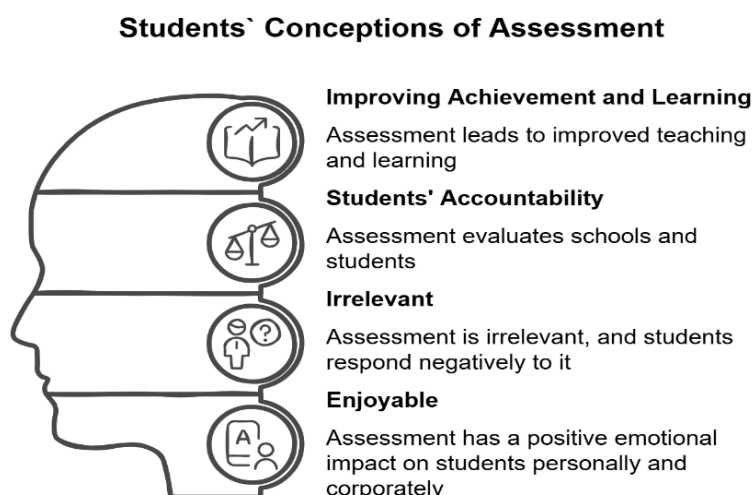
To date, only one study involving 566 Ecuadorian primary and secondary teachers, developed by Brown and Remesal (2017), has been conducted. The results showed to be consistent with how teachers seem to conceive of assessment within high-stakes examination jurisdictions (Brown and Remesa, 2017). Summative assessment is predominant in K-12 settings (Assessment Reform Group, 2002). Regarding assessment in Ecuador, the evaluation of student progress has been mostly tied to summative assessment practices (Quezada and Soto 2018). Koh & Luke (2009) state that large-scale testing is a high-stakes summative sorting mechanism at a secondary school level. Moreover, the results from those examinations assume an essential role in determining and shaping the curriculum and students' futures (Deneen et al., 2019).

Regarding how students conceive the nature and purpose of assessment, four major conceptions are presented in the literature from the SCoA (Students Conceptions of Assessment) inventory (Brown & Hirschfeld, 2008; Brown, Irving, Peterson, & Hirschfeld, 2009; Brown, 2011; Wang & Brown, 2014): "Students are reported as conceiving of assessment as (a) improving achievement, (b) a means for making them accountable, (c) being irrelevant, and (d) being enjoyable" (Brown & Hirschfeld, 2008, p.4) (see Figure 3). Firstly, the learners acknowledge that assessment subsists in improving learning and teaching (Pajares & Graham, 1998; Peterson & Irving, 2008) and it may be accomplished through evaluating their performance (Zeidner, 1992; Brookhart & Bronowicz, 2003; Harlen, 2007). Second, students recognize that assessment is applied to evaluate factors that are

external and out of their control like the quality of their schools, their intelligence, and their future (Peterson & Irving, 2008). Thirdly, it is acknowledged by the students that assessment could be an unfair, negative, or irrelevant process in their lives (Moni, van Kraayenoord, & Baker, 2002; Peterson & Irving, 2008). Finally, the literature points out that students recognize that assessment is part of secondary school life (Peterson & Irving, 2008). Also, they are aware that assessment affects their emotional well-being and the quality of relationships they experience with other students (Moni, van Kraayenoord, & Baker, 2002; Weeden, Winter, & Broadfoot, 2002; Brown, 2011). In this sense, “what students think about the nature of assessment, their roles, and the purposes of the assessment is likely to affect how they respond to and participate in these practices, also influencing their ability and desire to be self-regulated learners” (Brown & Harris, 2012, p.47).

Figure 3:

Brown and Hirschfeld's model of students' conceptions of assessment (Brown & Hirschfeld, 2008)



1.1.4. Perspectives and practices of assessment

Hadji (1994, as cited in Pereira, 2016) claims the existence of three different evaluation modes: summative assessment; formative assessment, and diagnostic assessment. Furthermore, “current practice recognizes diagnostic, formative and summative assessments, all of which are included in teachers' practices” (Rajić, 2017, p.66). In the design of these practices that are prepared around the three functions of assessment: to certify, to regulate, and to guide (Hadji, 1994); aspects like diagnostic, formative, and summative assessment are considered (Ferreira, 2007). In this sense, it is important to point out that all forms of assessment seek to have the student construct meanings, either

individually or in dialogue with other students, and seek to support the process of constructing meaning during the learning process, through the introduction of new evaluative experiences that are related to previous learning and that follow the directions of the achievement of learning objectives, which students currently face as something to be done in dialogue with others (Brookhart, 2017).

Diagnostic assessment

Diagnostic assessment is developed based on the following three questions: Where am I going? Where am I? What should I do to reduce the gap? (Hattie & Timperley, 2007). According to Pacheco (1995), diagnostic assessment is acknowledged as the modality implemented at the beginning of the teaching-learning process. For instance, when the scholar year or a new unit is started, it looks for “the gathering of the students’ knowledge that is considered pre-requisites to cover specific contents” (p.74). In words of Sanmartí & García (1999) diagnostic assessment is oriented to the exploration of the previous knowledge.

In the educational system, diagnostic assessment looks to determine a pupil’s strengths, as well as areas of improvement in the skills and procedures being taught, and to use this information to further improve student learning and guide additional instruction (Jang & Sinclair 2018). In other words, diagnostic assessment aims to identify the characteristics of the person such as representations and background knowledge to adapt and assist the pedagogical practice (Hadji, 1994). In this sense, Ribeiro (1997) states that diagnostic assessment is the previous stage in order to start the planned units. It has two objectives, to investigate whether students have the necessary skills and knowledge to start a new curricular block, and to find out if the learners already have all or a part of the academic requirements. The latter will result in a pedagogical practice different from the one planned by the teacher.

Some educators see diagnostic assessment as a component of formative assessment. However, many of them consider it a distinct form of evaluation (e.g., McMillan, 2001). On the other hand, Haycock (2017) advocates for more diagnostic assessments to help teachers understand more about what their students know, so that they can plan instruction more effectively. To do so, diagnostic assessment tools are required to be implemented by teachers in a formative approach to assessment (Säfström et al., 2024). Practically, the purpose of diagnostic assessment is to determine, before or during the pedagogical process, the strengths, weaknesses, knowledge, and skills of the learners. Identifying this information permits the teacher to remediate students and adjust the curriculum to meet each student’s specific needs (Shute, 2017).

Summative assessment

First and foremost, a frequent goal of assessment is to provide pupils with a certification of achievement (Broadfoot & Black, 2004), and this view of the assessment has widely been identified with more summative ways of assessment practice (Boud & Falchikov, 2006).

According to Fernandes (2007), the role of summative assessment is to classify and certify the students. Its function is to verify what the learners know and can do. Further, the main function of summative assessment lies in the certification, and the determination of the level of achievements made by a learner in reference to the curricular goals (Yorke, 2003) through products and the results (Yorke, 2003; Pereira, 2016; Flores & Pereira, 2019). Along the same line, Pacheco (1995) states that summative assessment has the characteristics of measuring and sorting the level of achievement that students have at the end of an academic cycle in order to certify the level of academic accomplishment. The latter shows that in the teachers' assessment practice, the exams appear as a requirement that allows them consolidation as a pedagogical authority and representative of summative assessment (Flores, Machado & Alves, 2017).

Examination and tests are frequently perceived as ways of summative assessment since they are applied to students specifically to draw information about individual students' general performance or accomplishment at the end of a period of teaching (Harlen, 2007). By the side of Fernandes, Alves, & Machado (2008), this modality of assessment regularly comprises two moments: one that occurs at the end of a teaching cycle; and a specific assessment that takes place after one or more learning stages. On the other hand, Cizek (2010) asserts that In brief, any test or other system of information gathering is a summative assessment if it meets the following two criteria: (1) it is administered at the end of some unit of instruction (e.g., unit, semester, school year); and (2) its purpose is primarily to categorize the performance of a student or system (p.3).

The validity of summative assessment within the educational process is justified (Flores, Machado & Alves, 2017). However, the use of summative assessments in educational evaluation more broadly can also be justified by three main aspects: accountability, information production, and performance issues (Chelimsky, 1997). Accountability-based assessments provide information primarily to policymakers, curriculum developers, and other stakeholders on the impact and effectiveness of the educational process. In terms of producing information, the aim is for a better understanding of the educational processes through the assessment results, the issues related to the performance seek an improvement of the educational practices, the curriculum, and the teaching methods (Kumpulainen & Lankinen, 2016, as cited in Toom & Husu, 2017). Stufflebeam and Shinkfield (2011, p. 345) assert

that summative assessment can assist the system “to help administrators decide whether the curriculum was finalized, polished by using the evaluative process in its first form (training), is an improvement over other available alternatives sufficiently significant as to justify the costs of its adoption by a school system.”

The purpose of using summative assessment conveys to the teacher to collect data or information to report students' evolution and accomplishments to the parents, students themselves, the students' next instructor, and others who may need such information (Harlen, 2007, 2008; James, 2004). In this context, it is essential to realize that the development and application of summative assessment support the criteria, and that subject matter knowledge and competencies reflect students' experiences and learning outcomes (Atkin, et al., 2001), rather than emphasize the views people have when they claim that summative assessment only summarizes learning and the “backwash” effects associated with it (Biggs, 1998; Harlen, 2004).

Formative assessment

Fernandes (2008) asserts that “alternative formative assessment is a complex social construction, an eminently pedagogical process, completely integrated to the teaching and learning, deliberated, interactive, which principal function is to regulate and improve the students' learning” (p. 65). From the perspective of Toom & Husu (2017) “formative assessment allows students to pay special attention to defining their goals, and encourages them to monitor their learning. This process aims to make students' thoughts and actions visible” (p.79). The purpose of formative assessment is mostly intrinsic to the teaching-learning process (Brown & Knight, 1994). It is not the same as summative assessment, whose purpose is confirmational or certifying. Its essential attribute is to be linked to the training action, to be integrated into the pedagogical act. It intends to conduce to improving continuing learning, informing the educator about the circumstances in which that knowledge acquisition is occurring, guiding the pupil about his/her path, successes, and challenges (Hadji, 1994). In this context, Alves (2004) recognizes formative assessment supports an adequate regulation of the activities involved in the teaching-learning process. The same author states that the regulatory perspective of formative assessment is expressed through the following levels:

- i) a regulation of the pedagogical device: the teacher, reporting the effects of the pedagogical work, modifying the action by adjusting the interventions;
- ii) a regulation of the student's activity that allows him/her to be aware of the difficulties faced during the training path, and to realize and correct the mistakes. (Alves, 2004, p.61)

According to Pacheco (1995), formative assessment is a part of the evaluation process that defines by qualities means the progress of the learning and provides feedback for regulation, facilitating the identification of necessary corrections. It is recognized that formative assessment is not just a simple assessment process but rather “a complex educational and indeed a social process” that when applied properly by teachers, can enhance positive student learning outcomes (Kennedy, et al., 2007, pp.5-6). Black and Wiliam (1998, p.7) describe formative assessment “as encompassing all those activities undertaken by teachers, and/or by their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged”. On the other hand, the Assessment Reform Group (2002) defines formative assessment as follows: The process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go, and how best to get there (p.2).

According to Wiggins (1998, p. 7), “The aim of [formative] assessment is primarily to educate and improve student performance, not merely to audit it”. Moreover, formative assessment is a source of continuous information for the teacher because the current student understanding is presented so that teachers can adjust instruction in order to improve student learning (Dixson & Worrell, 2016).

In turn, Shepard et al. (2005) wrote that a formative assessment “effectively implemented, can do as much or more to improve student achievement than any of the most powerful instructional interventions, intensive reading instruction, one-on-one tutoring, and the like” (p. 277). Moss & Brookhart (2009, p. 6) highlighted that “formative assessment is an active and intentional learning process that partners between teacher and the students to gather evidence of learning continuously and systematically with the express goal of improving student achievement”. Educators and their pupils actively and intentionally involve in the formative assessment procedure when they meet to do the following (Brookhart, 2006):

- Focus on learning goals.
- Take stock of where current work is in relation to the goal.
- Take action to move closer to the goal.

Several theoretical frameworks of formative assessment, primarily based on research in English-speaking contexts, have been proposed (Wicking, 2019). These frameworks include authentic assessment (Frey et al., 2012), dynamic assessment (Sternberg., and Grigorenko, 2002; Poehner, 2007; Antón, & García, 2021), assessment for learning (Gardner, 2012; Sambell, McDowell & Montgomery, 2013), teacher-based assessment (Davison & Leung, 2009), and learning-oriented assessment (Carless, 2011; Jones & Saville, 2016; Turner & Purpura, 2016). Although the frameworks

demonstrate differences, three principles seem to support student learning through assessment (Wicking, 2019). First, assessment tasks are learning-oriented and are regularly conducted through interpersonal interaction, either with peers or with the instructor. In addition, a variety of tasks exist, used to evaluate achievement by employing diverse methods. Second, students are encouraged to engage with detailed feedback from both formal and informal sources. Third, students develop their ability to evaluate their own (and others) performance through methods such as peer assessment and self-assessment, as well as using tools like rubrics and student-created scoring criteria. However, implementing formative assessment practices may be challenging for students raised in cultural contexts where such practices are uncommon (Wicking, 2019).

1.1.5. Assessment approaches

For classroom assessment three different but interconnected purposes involve different roles for educators, different planning, and different use of assessment data (Earl & Katz, 2006), namely: Assessment *for* Learning (*AfL*), Assessment *as* Learning (*AaL*), and Assessment *of* Learning (*AoL*).

Summative assessment is also called Assessment *of* Learning (*AoL*) to emphasize its nature as an assessment of an activity that has occurred (i.e., after a stage of learning). Nevertheless, the term also indicates a numerical aspect, and it is frequently associated with a mark or letter grade. Where this score gets high importance or has substantial outcomes for progression, it can be named “high stakes assessment”. In this case, there exists feedback only considered in a grade at the last stage of the pedagogical process. Formative assessment involves, besides other concepts, that of Assessment *for* Learning (*AfL*), as a set of evidence-informed classroom practices with the potential of learning improvement and raising standards of achievement. Further, formative assessment is also attached to the concept of feedback on learning (Black & Wiliam, 1998; Flores & Pereira, 2019). The practice of imparting formative feedback is a crucial aspect to *AfL*, rather than assessment as merely a measurement *of* learning (Ramsden, 2003; Stobart, 2008; Hughes, 2011). The significance of learning because of feedback to learners has led to the use in selected settings of the term Assessment *for* Learning (*AfL*), which emphasized the knowledge acquisition aspect. Numerous scholars affirm that it is just “feedback” if it influences pupil learning (Evans, 2013). *AfL* also includes the idea of feedback to educators on their teaching practice. It strengthens the importance of discussion between instructors and students (Nicol, 2010). Feedback, in this case, needs to be well-timed, applicable, and understandable. *AfL* has often been extended to incorporate the idea of the encouragement of students to self-regulate and critically assess their knowledge acquisition and performance (Sadler, 2010; Carless et al., 2011). Researchers like Earl & Katz (2006) put apart the concept *AfL* to highlight this

important skill and designate its Assessment *as* Learning (*AaL*). Students need help to obtain this competence (Evans, 2013). In summative assessment, the teacher is the most accountable, the main decision-maker, whereas in formative assessment, above all in *AaL*, it is the learner who becomes more empowered, more responsible, and can become the person who makes decisions. As the instructor generally retains power, there is a more extrinsic locus of control for pupils in summative assessment, and this shifts to an intrinsic management of control in formative assessment.

Since the mid-90s, *AfL* has been broadly proclaimed for improving teaching and learning within various academic contexts, as compared to *AoL* which intended to judge learning for certification purposes. As elements of the *AfL* tendency, *AaL* has arisen as a vital concept that facilitates learner autonomy and reflection by emphasizing students using assessment to improve learning through self-assessment, self-efficacy, and other self-regulatory behaviors, and by integrating it as a learning supportive factor into the teaching and assessment process (Torrance, 2007; Earl, 2013; Dann, 2014). Nevertheless, their commonalities, *AaL* relates to the development of cognitive and metacognitive capacity in self-assessing one's learning, whereas *AfL* leads to how learning is formatively assisted in the ongoing assessment process (Lam, 2016).

A more translucent differentiation, in the context of evaluation or assessment belonging to the learner, is between *AoL*, for scoring and reporting, and *AfL*, where the precise purpose is to implement assessment as a component of teaching to encourage knowledge acquisition (Assessment Reform Group, 1999). *AfL* takes the role of "formative" when evaluation is applied for the regulation of learning processes (Perrenoud, 1998; James & Pedder, 2006). In the last years it has been stated that assessment should go from *AoL* to *AfL*, where the processes and practices of assessment are generated to assist learning and sustain, rather than hinder, trust, pupil performance and progression (Black & William, 1998; Torrance & Pryor, 1998; Gipps, 1999; Shepard, 2000). As a matter of fact, these assertions have become so prevalent that inquiry and development attention has focused on the spreading and practice of formative approaches to large-scale evaluation processes (Torrance, 2007).

Assessment of Learning (AoL)

Assessment of Learning (AoL) has long been linked with more summative channels of assessment practice (Boud & Falchikov, 2006; Thomas et. al., 2019). It is implemented to "confirm what students know and can do, to demonstrate whether they have achieved the curriculum outcomes, and, occasionally, to show how they are placed" concerning others (Earl & Katz, 2006, p. 14). It refers to a group of strategies planned and applied to substantiate the level of knowledge of the students and

the accomplishment of the program or course objectives. One of the main intentions of assessment of learning is to offer evidence of pupil results, i.e., to quantify student results through marks or categorization (Lam, 2016; Flores & Pereira, 2019, Fernandes, 2020). By certifying the learners' achievements, assessment of learning turns public as well as the results and what learners have acquired (Earl & Katz, 2006; Fernandes, 2020) (see Figure 5).

Earl & Katz (2006) assert that the principal purpose is the presentation of the accomplishment of pupil learning:

- a. It is graded and is usually high stakes for students, staff, and institutions;
- b. It usually occurs after a period of learning;
- c. It is associated with concepts such as measurement, competencies, standards, regulations, and explicit criteria;
- d. Its role in decision-making is to communicate students' performance to key stakeholders, often comparing them to other students (norm-referenced assessment) or to competencies (criterion-referenced assessment). Institutions and staff then make decisions on student progress. Based on these results, students also make decisions on their learning tasks and/or progression routes;
- e. It is often a key driver for student learning ("if it's not assessed it doesn't matter"). It can be associated with student and/or staff anxiety and workload but also can build student/ staff confidence when the outcome is to their satisfaction;
- f. Common examples are the end-of-term exam, essay, project, and degree classifications.

AoL aims to provide confirmable evidence of achievement to several stakeholders: learners, guardians, and educational institutions. Independently of your views on *AoL* and the objectivity positioned on these kinds of assessments, they play a fundamental role in our system of education: they influence the composition and application of schemes of knowledge acquisition, they leave a memorable impression on the framework of education transfer and are essential in benchmarking the educational performance of schools (through PISA) and Tertiary Education institutions (for example Eurydice network) (Hall, 2020).

Assessment for Learning (AfL)

Assessment for Learning (*AfL*) has been a policy focus since 1996 thanks mainly to the efforts of the Assessment Reform Group (ARG) (James & Pedder 2006) and has been traced by Black and

Wiliam (2006) from the works of Scriven (1967), who first distinguished between formative and summative evaluation purposes, and Sadler (1989), who emphasized the relevance of establishing common understandings of formative criteria to notify students about their learning (Willis, 2011). This expression extensively used in Anglo-Saxon literature incorporates a refined conception of assessment (Pereira & Flores, 2019).

Formative assessment was the term used by Black and Wiliam (1998) in their meta-analysis and in some of their later published work (Black & Wiliam, 2006). Moreover, Popham (2008) used this term in the United States of America, Perrenoud (1998) in the French context, and Carless (2007, 2011) in Asia, specifically in Hong Kong. On the other hand, in Scotland, public policy was deliberately branded AiFL (Assessment is For Learning) to reinforce the learning purpose of all assessment (Hutchinson & Hayward, 2005; Willis, 2011).

AfL was conceptualized as more than a set of techniques or strategies that should lead to spreads in learner achievement scores. *AfL* was assumed to be a dialectical and cultural array of practices through which pupils increasingly accepted and negotiated their involvement in the educational experiences. The objective was to enhance learner self-efficacy; that is to say, expanding the learner's capacity to supervise and design his or her own learning progress and participation in the classroom context (Willis, 2011).

Assessment for Learning (*AfL*) has been identified as the ground for instructional innovation and with the relevance of assessment for student knowledge acquisition (Gibbs & Simpson, 2004; Nicol & Macfarlane-Dick 2006; Carless, 2007; McDowell et al., 2011; Crisp, 2012; Trede, Mischo-Kelling, Gasser & Pulcini, 2015; Mumm, Karm & Remmik, 2016; Santos, Flores & Flores, 2017; Hawe & Dixon, 2017; Mimirinis, 2019) in educational settings. It is a kind of assessment in which the primary priority, in terms of planning and practice, concentrates on encouraging pupil learning (Black et al., 2002). A core condition for assessment to assist student learning is to equip the learners with predispositions and attitudes for active involvement in the assessment process (Black & Wiliam, 1998). Consequently, students can create a proper contribution to their understanding of knowledge, which is favorable to learning goals (Sluijsmans, 2002). This perspective has become recognized as the *AfL* position (Black & Wiliam, 1998; van Gennip, Segers, & Tillema, 2010).

According to Hargreaves (2005), this approach is significant because it supervises and monitors student's academic performance to the detriment of purposes and goals to be achieved; practices assessment to recognize the subsequent steps to apply in the formative process; leads the

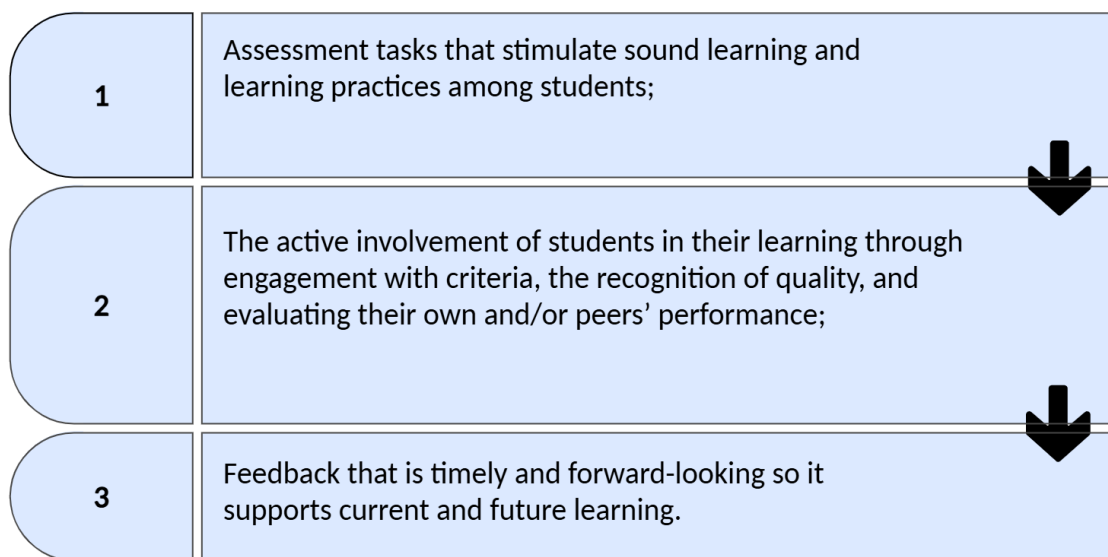
assessment towards ongoing improvement; provides pupils some sense of control over their learning; and, lastly, remodels assessment into a learning practice.

Carless (2005) asserts that the development and examination of *AfL* approaches may include designing possibilities to implement the assessment collaboratively with pupils; by sharing learning intentions with the learners so that they realize what standards they are working with; and by implementing of assessments that promote cognitive skills, imaginative capabilities, and understanding, to the contrary of the logic memorization (Santos, Flores, & Flores, 2017).

The former author (Carless 2007, 2015) proposed a framework for learning-oriented assessment that reveals the essence and purpose of *AfL* in its three central elements (see Figure 6) to address forms in which assessment can pay attention more successfully to improve the pupil's knowledge learning:

Figure 4:

Core elements for learning-oriented assessment (adapted from Carless, 2007, 2015)



A definition of *AfL* given by McDowell, Wakelin, Montgomery, and King (2011) points out that *AfL* is an evaluative environment that: is rich in formal and informal feedback; offers opportunities for the experimentation and practice of knowledge, competencies, and awareness; incorporate authentic assessment tasks; supports learners develop self-determination and autonomy; and it is marked by a convenient balance between formative and summative assessment (Santos, Flores, & Flores, 2017).

Some research studies dedicated to students' perceptions present that the *AfL* approach includes them in the acquisition of knowledge (Klenowski, 2009; McDowell et al., 2011; Sambell, McDowell, & Montgomery, 2013; Mumm, Karm, & Remmik, 2016), offering them with more favorable,

significant, and pivotal experiences like: better support from the educator teacher, flexible curriculum design, possibilities to implement dialogue through formal and informal feedback, person to person learning, opportunities for investigation, competency testing, questioning, among other things (Black et al., 2002, 2005; McDowell et al., 2011). Current literature emphasizes there is a need to develop and examine *AfL* practices in the academic context (McDowell et al., 2011), as essential components to improve the quality of the pedagogical process in educational institutions (Santos, Flores, & Flores, 2017).

Sambell, McDowell, and Montgomery (2013) defined the term *AfL* following six practices:

- Authentic assessment – assignments that require deep and meaningful approaches to learning and are linked to the real world, i.e., those requiring the skills and knowledge that are expected in the professional field;
- Balancing summative and formative assessment – summative assessment is not the dominant method for assessing students;
- Creating opportunities for practice and rehearsal – students should have the opportunity to practice and develop their competence before they are summatively assessed;
- Designing formal feedback to improve learning – feedback (written, as well as oral, comments from different sources) is received during the learning process in order to feedforward the student;
- Designing opportunities for informal feedback – students' study in collaboration with peers as well as teachers, so the received feedback is part of the teaching and learning process;
- Developing students as self-assessors and effective lifelong learners – students need to assess their own progress and develop their metacognitive skills.

A learning context that is supported by *AfL* guides learners to become self-directed learners (McDowell et al., 2011). According to Sambell, McDowell, and Montgomery (2013), for a successful assessment, the teacher trainers and pupils must engage in the process, which means that students should also be aware that assessment is a means of learning. Moreover, students should approach assessment in different ways, including being the advisor, as doing so helps them to assume responsibility for their own knowledge acquisition (Sambell, McDowell, & Montgomery, 2013; Mumm, Karm, & Remmik, 2016).

Assessment for Learning (*AfL*) belongs to a universal education policy discourse reflecting a substantial shift in the purpose of assessment, from a measurement to a learning focus, yet it is promulgated differently in different cultural contexts (Broadfoot, 1996; Black & Wiliam, 2005). By sharing learning objectives and criteria with pupils, providing them experience in self-assessment and guiding them with feedback (Orsmond, Merry, & Reiling, 2005; Weaver 2006; Wingate 2010; Blair & McGinty, 2013; Mumm, Karm, & Remmik, 2016), it is alleged that students have the capacity to become more self-regulating and independent lifelong learners (Gipps, 2002; Willis, 2011). It's concluded that *AfL* practices can benefit pupils negotiate an identity as an autonomous learner, or someone acquiring more experience, when they also feel a sense of connection with, or a sense of belonging within, the community of practice of the classroom (Willis, 2011).

The practices that engage pupils as hands-on partners in the assessment process allow them to develop their ability to self-regulate their learning (Panadero, Jonsson, & Strijbos, 2016). Further, *AfL* practices like self-assessment and peer assessment offer a pivotal way that pupils have the power to reflect on and assess their developing mastery and understanding of the practices that are evaluated in the classroom community of practice, as they take part in those practices. Well-defined learning targets and criteria have also been estimated as *AfL* practices that share expectations for expertise with pupils (Willis, 2011). Strategies that entail peer assessment are commonly used in academic settings and have considerably influenced assessment processes (Gielen & De Wever, 2015). Peer assessment is a focal principle of formative assessment and is associated with the concept that assessment is essential for learning (Blair & McGinty, 2013; Panadero & Brown, 2017; Ion, Martí, & Morell, 2019). Cartney (2010), however, points out multiple challenges that students face when they are practicing peer assessment: concerns that they are being highly critical; concerns about later being on the receiving end of peer assessment; concerns about both the criteria and its intelligibility; anxiety about students who did not give feedback. Despite there being inconsistent results about peer assessment, its role in the context of *AfL* is still relevant (Sambell, McDowell, & Montgomery, 2013; Mumm, Karm, & Remmik, 2016).

In *AfL*, the assessment methods must include a collection of possibilities for pupils to prove their learning (Earl & Katz, 2006). They may embrace “focused observations, questioning, conversations, quizzes, computer-based assessments, learning logs, or whatever other methods are likely to give them information that will be useful for their planning and their teaching” (Earl & Katz, 2006, p. 31). The fundamental nature of *AfL* includes the acquisition of understandings from learners

through a set of tasks and activities, and the formative use of this information to facilitate and further student learning (Carless, 2007; Hawe & Dixon, 2017).

In brief, even though the concepts of formative assessment and assessment for learning are frequently used as similar terms (Hawe & Dixon, 2017), these are different concepts. *AfL* is a process based on the central role of the learner (Klenowski, 2009; Swaffield, 2011; Hawe & Dixon, 2017) fostering the mutual dependence of teaching, learning, and assessment (Black, 2015; Black & Wiliam, 2018). Recent research literature about assessment points out there is a need for balance between formative and summative assessment (Black & Wiliam, 2018), although in the assessment for learning approach, summative assessment and categorizations are secondary (Deeley, 2018); and, above all, an integrated approach to assessment incorporating all their facets (Black & Wiliam, 2018, Fernandes, 2020).

Assessment for learning (*AfL*) is a continuous concern in the development of teaching and educators (Alabaş & Yılmaz, 2018). *AfL* is labelled to developing subject accomplishment along with continual competencies (Bennett, 2011; Leong & Tan, 2014; Deneen & Boud, 2014). The teachers' mastery of connecting *AfL* to *AoL* is also pivotal to the current terminology of assessment literacy (Deneen & Brown, 2016). Making this connection between assessment *for* and *of* learning can be thought-provoking in the face of large-scale testing. There are relevant tensions between *AfL* and established models of large-scale testing proposed to certify pupil accomplishment, such as public qualification examinations. Preparation for formalized examination takes part with other priorities for time, attention, and focus within curricula; the narrowing result this can have on curricula is a problem of growing concern (Taras, 2010; Berry, 2011; Bonner, 2016; Alabaş & Yılmaz, 2018).

Assessment as Learning

The term "*AaL*" is being reconceptualized to justify predominant discourses (Torrance, 2012) in which the performativity and accountability agendas triumph (Dann, 2014). It is obviously not clear in the current literature if *AaL* sits in the understanding of assessment or learning. Dann (2002, p. 153) proposes the concept of "*AaL*", affirming that "assessment is not merely an adjunct to teaching and learning but offers a process through which pupil involvement in assessment can feature as part of learning – that is assessment as learning". This scholar claims that to develop students' engagement in and answer to student self-assessment with an emphasis on exploring processes like self-regulation, self-efficacy, metacognition, and feedback as dimensions of both assessment and learning (Dann, 2014). Thus, assessment-as-learning offers the opportunity to overcome, at least mitigate, the practical

impediments experienced during the application of assessment reforms, such as the large number of students per class and heavy educational workload (Yan & Brown, 2021).

According to Torrance (2007), assessment for learning has turned so methodical in some institutions that, in a very concrete way it has moved from *assessment of learning* through *assessment for learning* to *assessment as learning*, for both pupils and educators alike, with assessment procedures and processes that dominate completely the pedagogical experience.

Earl (2003) proposes a re-configuration of our understanding of assessment practices and finds *AaL* as a key foundation for both assessment for learning (traditionally and formative assessment) and assessment of learning (traditionally and summative assessment). The nature of *AaL* is the complex relationship of assessment, teaching, and learning, which holds at its core the notion that learners need to be aware of their learning progress and objectives through a series of processes that are in themselves intellectual events. There is an implicit need for pupils to be active in learning and assessment. This has unique connotations about how students are immersed in assessment (Dann, 2014). The same scholar indicates a different approach to assessment: assessment as learning, which originates from a subset of assessment for learning that highlights the role of the learners as an essential connection between assessment and learning (Hume & Coll, 2009; Earl, 2013; Dann, 2014). Within this perspective, assessment represents a learning device (Dochy & MacDowell, 1997).

Authors like Sadler (2010), Evans (2013), and Lysaght & O'Leary (2013) assert that the main objective is to empower students to self-regulate and critically evaluate their acquisition of knowledge and performance:

- a. It is ungraded assessment, with the rare exceptions of graded self-assessment;
- b. It occurs during the learning process and emphasizes the preparation of students for their future learning;
- c. It is associated with concepts such as self-monitoring, self-regulation, meta-cognition, learning, and feedback;
- d. Its role in decision-making is also to help students understand their own strengths and gaps in order to plan their future learning. It informs students' actions for improvement to their learning. It also supports the development of students' self-regulation skills;
- e. It attempts to empower students, to give them confidence in their judgements and develop a sense of responsibility for their learning;

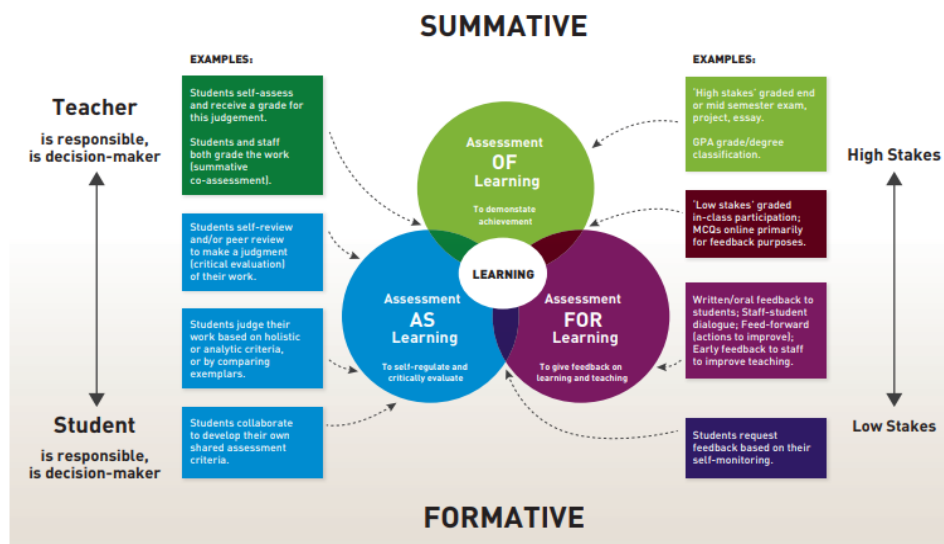
- f. Common examples include students self- and peer reviewing their work against holistic or analytical criteria (Sadler, 2009), students using exemplars to judge their and other students' work (Carless et al., 2011), and students collaborating to develop their own shared assessment criteria (Evans, 2013).

Assessment *as* Learning (*AaL*) allows reflective students to decide on their subsequent learning stage. As with any strategy that looks to empower the pupils, *AaL* is frequently assisted by the educator first. An effective approach to *AaL* will have the students questioning, "What are the criteria for improving my work?" Strategies involve but are not restricted to regular peer and self-assessment, regular and thought-provoking practice, letting learners question their acquired learning, and promoting an environment where taking chances and making mistakes are encouraged (Hall, 2020).

To sum up, each of these terms therefore assumes a pivotal role in learning, with different emphases demanded at different times for diverse purposes. Having a deeper understanding of these terms should allow for a more operational and useful design of learning experiences. The concept that links these three terms (*AoL*, *AfL* and *AaL*) together, their common overlap, is that they all pave the way for students' learning (see Figure 5).

Figure 5:

Assessment and feedback terminology and examples



(National Forum for the Enhancement of Teaching and Learning in Higher Education, 2017)

1.1.6. Assessment methods

Assessment is at the center of teaching and learning in educational contexts; it is highly influential in shaping the learning experience of students (Ramsden, 2003), defining the content to be learnt and the processes used to learn it (Biggs & Tang, 2011; Thomas et al., 2019). All assessments lead to some kind of student learning (Boud, 1995), but a fundamental challenge is to stimulate the right kind of learning. "Making assessment act as leverage to facilitate student learning is not only a desirable practice in classrooms but also an important goal of global assessment reforms" (Yan & Yang, 2021, p.1).

Assessment activities frequently place effort not uniformly across a program (Gibbs & Simpson, 2004), and examinations are often blamed for encouraging memorization or superficial approaches to the acquisition of knowledge (Ramsden, 2003; Carless, 2007).

The act of assessing (formally and informally; formatively and summatively) impacts evaluators and pupils. Assessors realize the extent to which students have developed knowledge and can adapt their teaching appropriately. Sometimes, the answers to an assessment by the respondent will result in a challenge to the assessor (Yorke, 2003). It is very likely to accomplish this kind of skilled behavior, although it depends mostly on the significant knowledge, skills, and competencies. Scholars in educational contexts are paying increasing attention to the role of students' self-efficacy and perception during learning (Schunk, 2003; Dochy et al., 2005; Baartman & Ruijs, 2011; Van Dinther et al., 2014).

The main narrative in educational investigation makes the case that learners must take an active role in their instruction – to do so is to move towards deep learning (Carnell, 2016). More than a few characteristics pondered as indicative of this culture of assessment that foster the student's active role include: active participation in contextualized activities that require the application of background knowledge and skills; participation in discussions between peers (including tutors); engagement to the development of criteria and self-regulation of the work itself; applying a diversified series of assessment methods and methods shaped from several disciplines; opportunity to set up and use attributes like reflection, resolution, resourcefulness and judgment and professional behavior about problems; and awareness of a limitation of judgment and the value of having discussions to make easy the evolution of innovative of working (Schwartz & Webb, 2002; Bryan & Clegg, 2006; Rust, 2007; Craddock & Mathias, 2009).

Moreover, assessment can be used strategically to modify how pupils learn (Gibbs, 1992; Craddock & Mathias, 2009). Presenting an array of assessment methods is habitually suggested as good practice in order to answer several critiques of the over-reliance on habitual examinations and

their shortcomings. The arguments involve the necessity to implement methods which better assess different types of learning processes, the need to cater for differences in students' learning preferences and styles, and the need to improve learners' psychological approaches to learning (Kell & van Deursen, 2002; Craddock & Mathias, 2009).

During the consideration of models for assessment of student learning, educators should take in account alignment of assessment with the learning goals of the program; the quality and amount of feedback to be given (Kealey, 2010); the indicators delivered by assessment methods to students on the type of learning desired, e.g., surface learning versus deep learning (Harlen & James, 1997); and the mutual influence between formal and informal modes of assessment (Kealey, 2010).

The modes of assessment can have a powerful impact on students' learning behavior (Hamdorf & Hall, 2001; Biggs, 2003), and assessing students' performance is one of the most relevant activities instructors undertake (Trotter, 2006). Developing suitable assessment strategies is therefore an essential component of effective curriculum development (Craddock & Mathias, 2009).

Students will engage in deep learning if they perceive a need to understand the material in order to successfully negotiate the assessment task (MacLellan, 2001). Whilst a powerful element of learning outcome, students' experiences of assessment do not appear in a gap but are contextualized in their overall perceptions of the objectives to be met, the workload they experience, the teaching they experience, and the independence they have in managing their learning (MacLellan, 2001).

Student-centered vs teacher-centered methods

The development of a variety of assessment methods in educational settings (Sambell, McDowell, & Brown, 1997; Struyven, Dochy & Janssens, 2005; Pereira & Flores, 2012) moves away from a culture of testing (Birenbaum & Dochy, 1996). Being distinguished by the incorporation of assessment, learning, and teaching processes (Dochy, 2001; Rust, 2007; Pereira, Flores, & Barros, 2017). The application of learner-centered methods facilitates a more effective and motivating learning context (Birenbaum & Feldman, 1998; Tang et al., 1999) than traditional assessment methods (Flores et al., 2014; Flores & Pereira, 2019).

Learner-centered methods (Webber, 2012) and activities like project or portfolio (Huba & Freed, 2000; Webber, 2012) that allow cognitive structuring and skills' development promote the evolution of autonomy, spirit of accountability, reflective and collaborative work (Sambell & McDowell, 1997, 1998; Myers & Myers, 2014), augmenting feedback and learners' motivation (Huba & Freed, 2000; Gasiewski et al., 2012; Pereira, Flores, & Barros, 2017) and affect how learners look at their learning (Sluijsmans,

Dochy, & Moerkerke, 1999; Pereira, Flores, & Niklasson, 2016). Additionally, self and peer assessment are good examples that meet the purposes of learner-centered assessment (Pereira, Flores, & Barros, 2017). Contrarily, unconventional methods do not always modify the perceptions of students and do not always lead to deep learning (Segers, Gijbels, & Thurlings, 2008; Pereira, Flores, & Niklasson, 2016). In this teacher-centered perspective, pupils are seen as passive learners (Altay, 2014; Pereira, Flores, & Barros, 2017), which focuses on the transference of knowledge (Webber, 2012; Pereira, Niklasson, & Flores, 2017).

In student-centered learning environments, students are confronted with an authentic task to induce meaningful learning encounters (Birenbaum & Dochy, 1996). Gow and Kember (1993) stated that a student-centered learning environment is less likely to generate surface approaches. Duties and responsibilities that have been assumed by the teacher early are delivered to the pupil (Elen, Clarebout, Léonard, & Lowyck, 2007). Contrarily, a teacher-centered learning environment, like the typical instruction, is said to inhibit students from adopting a deep approach to study (Entwistle, 2003; Elen et al., 2007).

A student-centered approach with its priority on central generic skills and transversal capabilities like critical thinking, problem-solving and autonomous learning (Light & Cox 2005; OECD 2012) imply that they tend to be pondered pedagogically better than the surface delivery commonly connected with a teacher-centered approach (Akerlind, 2003; Blackie, Case, & Jawitz, 2010). In this regard, student-centered approach involves four fundamental characteristics: (1) active responsibility for learning, (2) proactive management of learning experience, (3) independent knowledge construction, and (4) teachers as facilitators (Maclellan, 2008; Attard et al., 2010; McCabe & Una O'Connor, 2014).

Reflecting the teacher-centered approach, the pupils perform their work alone, where they apply tasks connected to the teacher's presentation during or after the lesson. On the other hand, in the student-centered approach, the students work in groups or pairs as per the demand and objective of the proposed activity (Al-Zu'be, 2013). The teacher-centered approach describes students as mainly passive while the teachers are active, since educators appear to be the central focus in this approach which is considered sensible. In this situation, learners are less involved during the acquisition process (Al-Zu'be, 2013).

Studies about the relationship between a student-centered approach and deep learning proposes a link marked by various variables, including teacher orientation (Garrison & Cleveland-Innes, 2005; Baeten et al., 2010), teaching behavior (Valk & Marandi, 2005; Diseth, 2007), clarity of purpose (Richardson et al., 2007; Diseth et al., 2010), assessment (Segers, Nijhuis, & Gijsselaers, 2006;

Gulikers et al., 2008) and feedback (Lawless & Richardson, 2002; Valk & Marandi 2005; McCabe & Una O'Connor, 2014).

Feedback is acknowledged as a central component of the assessment process as well as a key element in a learner-centered approach (Nicol & Macfarlane-Dick, 2006; Price et al., 2010; Pereira, Flores, & Barros, 2017). Apart from that, feedback becomes for students a chance to understand enabling the regulation of the learning process (De Weert, 1990; Taras, 2002; Poulos & Mahony, 2008; Pereira et al., 2016; Pereira, Flores, & Barros, 2017) and may help students' acquisition of knowledge (Weurlander et al., 2012; Mumm, Karm, & Remmik, 2016), in particular when the commentaries are provided in person and in an opportune time (see Ferguson, 2011; Mumm, Karm, & Remmik, 2016). Formative feedback is fundamental. It must be complete, comprehensive, significant to the human being, fair, challenging, and supportive considering strategies for providing feedback successfully such as assignment return sheets, assignment reports, in-class collective feedback, and other means (Brown, 2005).

A wide range of teaching methods is described by the brands "Student Centered", "Non-directive", "Group Centered", or "Democratic Discussion". What these diverse methods have in common is the desire to separate from the traditional teacher-centered classroom and to promote more extensive learner involvement and accountability. With the educator acting more indirectly and promoting students the opportunity to regulate their learning conditions, to assume the results of mistakes, and to learn from these experiences is a significant way of teaching them to become accountable (Boyapati, 2000). The selection of teacher-centered versus learner-centered learning depends on the objectives of the teacher. The more outcomes beyond knowledge acquisition are valued, the more likely it is that student-centered learning will be selected.

In the teaching, learning, and assessment process, it is essential the prevalence of a collective learning environment; instructors and students need to be aware of the individual efforts from the members of the group (Johnston & Miles, 2004; Le, Janssen, & Wubbels, 2017). Absence of individual efforts can lead to less productivity and a lack of contribution (Sluijsmans & Strijbos, 2010; Le, Janssen, & Wubbels, 2017). This approach underlines the active participation of the learners in assessment for learning and incorporates a range of ways, like the involvement of pupils in understanding and designing criteria, collaboration with educators, and participation in peer feedback. These practices involving students as active collaborators in the assessment process allow them to develop their ability to self-regulate their learning (Panadero, Jonsson, & Strijbos, 2016; Ion, Martí, & Morell, 2019). Nevertheless, it is still fundamental to assess accurately the individual contributions in a

learning process that is collaborative (Johnston & Miles, 2004). Teachers often face challenges monitoring collaborative processes and individual contributions in a cooperative learning environment (Sluismans & Strijbos, 2010; Le, Janssen, & Wubbels, 2017).

Traditional vs alternative assessment methods

As pedagogical and administrative requirements have become highly varied, an alternative approach to conventional instructional practices has obtained increasing value (Struyven, Dochy, & Janssens, 2010).

Published research differentiates the traditional assessment methods (mostly the written test or exam) from the alternative assessment methods (Duncan & Buskirk-Cohen, 2011; Pereira & Flores, 2016). It underlines the teacher-centered and the student-centered practices (Burkšaitienė & Teresevičienė, 2008; Fernandes, 2015; Myers & Myers, 2015). Traditional methods, commonly used in the context of higher education (Duncan & Buskirk-Cohen, 2011), in the environment with large classes (Flores et al., 2019), along with educators' work overload (Myers & Myers, 2015; Fernandes, 2020).

Struyven, Dochy, and Janssens (2005) define traditional assessment methods as mostly inadequate since their focus on measuring memory or the student's capacity to compile a collection of information (i.e., unseen essays). In traditional assessment methods, all pupils have "the same tasks and time allocation" (Brown et al., 1997, p. 14). Its main role is to certify the learning achievements (Black & Wiliam, 1998; Dwyer, 1998). Traditional assessment is frequently used, and looks to be appropriate, in numerous educational contexts (MacLellan, 2001; Struyven, Dochy, & Janssens, 2005; Barreira et al., 2015; Pereira, 2016; Fernandes et al., 2020) but could additionally foster reproduction and memorization (Perrenoud, 1999; Biggs, 2003; Fernandes, 2020) and limited understanding (Dochy et.al, 2007).

The application of innovative methods of assessment in the educational setting has gained impetus as learners distinguish them as fairer, appearing to promote collaborative effort to learn as opposed to last-minute memorization (Struyven, Dochy, & Janssens, 2005). Essentially, these non-traditional methods:

Measure qualities, skills and competences which would be valuable in contexts other than the immediate context of assessment ... [and enable] students to show the extent of their learning and allowed them to articulate more effectively precisely what they had internalized throughout the learning program. (p. 333)

Nevertheless, Gibbs and Dunbar-Goddet (2009) have concluded that this expansion in the practice of various assessment methods, as titled by many institutional teaching, learning, and assessment strategies, is habitually not met with appropriate possibilities for pupils to become familiar with them. The outcome can be that learners are pushed into focusing upon expanding their abilities to move through the unconventional assessment task, rather than upon understanding the subject or developing as pupils. That is not to promote a rejoin to the traditional methods of assessment. The most diverse assessment methods are complemented by a large body of research evidence advocating the multiple benefits they bring to the learner if applied effectively (e.g., Bloxham & West, 2004; McLaughlin & Simpson, 2004; Van den Berg, Admiraal, & Pilot, 2006; Andrade & Valtcheva, 2009; van Zundert, Sluijsmans, & Van Merriënboer, 2010; Nulty, 2011). But only changing the traditional methods of assessment will not work to challenge the prevalent rhetoric of the testing culture that supports the assessment system. Further, the more diverse assessment methods being announced are mainly reflective of individual staff efforts.

While changes to assessment tasks can function as initiate for the development concerning student approaches to studying, Haggis (2003) advises that in the overcrowded system of education, with an increasingly diverse student body, it will not necessarily explain the details of academic practice to individuals who frequently enter to the educational setting with no idea what critique, argumentation, or structure entails. Hence, the drive towards student engagement has also been emphasized as essential to developing assessment that support learning and encourage the learner “to hold a concept of quality roughly similar to that held by the teacher” (Sadler 1989, p. 121).

In the setting of traditional assessment methods, tests and exams represent common examples. Both methods result in positive and negative outcomes. On the one hand, they can bring innovative practices and supply to assessing the educational system and enhancing decision-making as well as offering important clues about what is imperative to teach and learn. But, on the other hand, they focus essentially on academic knowledge; they may lead to the participation of the learners or stimulate dishonest practices; and they may segregate rather than integrate (Fernandes, 2004). Undoubtedly, the traditional methods employed alone may restrict the scope of assessment and the learning process (Pereira, Flores & Barros, 2017). For example, the summative test as a terminal assessment does not allow pupils to receive feedback to improve future achievement, hindering the feed forward stage to occur (Blair et.al., 2014; Pereira, Flores & Barros, 2017; Flores & Pereira, 2019).

Boud (2007) suggested reconsidering assessment as if learning was its main goal; the reframing would include a requirement that makes students able to make judgements about their

learning and to use those judgements to impact their approaches to future learning (Crisp, 2012). In other words, the external influences on the educational system may cause assessment to assume mainly a summative function. Considering that policymakers view assessment as an agent of educational reform (Linn, 2000), comparisons and generalizations based on derived information have a logical effect. If alternative assessment is providing the data that inform educational policy, the extent to which alternative assessment is applicable must be of main concern (Hernández, 2012).

An expanding body of research literature highlights the view of students as co-creators of learning (e.g., Bovill, CookSather, & Felten, 2011). Publications point out the way this experience can improve the learning processes, achievements, and metacognition around the cycle of learning, which has been suggested to result in the embracing of deeper approaches to learning. Methods for enhancing student active participation in assessment include self and peer assessment (van Zundert, Sluijsmans, & Van Merriënboer, 2010; Nulty, 2011), the implementation of communities of learning (Price et al., 2008), dialogic feedback (Nicol, 2010; Carless et al., 2011), developing mutual understanding of the often-tacit knowledge underpinning assessment (Rust, Price, & O'Donovan, 2003; Bloxham & West, 2004) and, more recently, co-creation of the assessment process (Meer & Chapman, 2014).

In the related research on assessment, similar denominations concerned with the concept of “learner-centered assessment” are used like “alternative assessment” (Light & Cox, 2003; Struyven, Dochy, & Janssens, 2005). Moreover, it may be possible to find in relevant studies alternative ways of seeing the nature of assessment methods, such as “mixed methods” (Flores et al., 2015) which combine aspects of conventional assessment and learner-centered assessment, rather than just establish assessment at one pole of the dichotomy (Pereira, Flores & Barros, 2017). Mixed methods are acknowledged to use diverse modes of assessment and diverse ways of delivery; promoting a range of assessment options; give a more productive answer to students’ learning styles; and improving student’s satisfaction – by including learners in the assessment (Kell & van Deursen, 2002; Craddock & Mathias, 2009; Flores, Veiga Simão, Barros & Pereira, 2015).

Learner-centered methods or alternative assessment methods (Webber, 2012), like portfolios, projects (Brown et al., 1997; Light & Cox, 2003), self- assessment (Crisp & Lister 2002; Taras 2002, 2010; Sambell, McDowell, & Montgomery, 2013; Panadero & Jonsson, 2013; Mumm, Karm, & Remmik, 2016) and peer assessment (Van Zundert, Sluijsmans, & Van Merriënboer 2010; Nulty 2011), simulations, open-book exams, prior notice exams (Light & Cox, 2003), problem based learning (Light & Cox, 2003), patchwork text (Scoggins & Winter, 1999) collaborative assessment, among others

(Struyven et al., 2005; Flores et al., 2015; Pereira et al., 2015; Pereira & Flores, 2016) promote collaborative learning (Johnston & Miles, 2004; Le, Janssen, & Wubbels, 2017), and hand in hand with self and peer assessment appear as better for the development of deep learning, new skills and professional attitudes. The so-called alternative methods effectively promote further learning (Birenbaum & Feldman, 1998; Sambell & McDowell, 1998; Tang, Lai, Arthur, & Leung, 1999; Struyven, Dochy, & Janssens, 2005), by encouraging the development of autonomy, sense of responsibility, and reflection (Sambell & McDowell, 1998) and influencing how students perceive their learning in a more helpful way (Sluijsmans, Dochy, & Moerkerke, 1998).

As a pedagogical tool portfolio combines formative and summative goals (Habib & Wittek, 2007), normally designed to promote pupil learning during the active use of feedback (Smith & Tillema, 2003; Steen-Utheim & Hopfenbeck, 2019). Portfolios are found in all the stages of education and professional development for learning, assessment, promotion, and evaluation (Klenowski, Askew, & Carnell, 2006). Descriptions of portfolios underline the collection of work that contains a reflective commentary (Klenowski, Askew, & Carnell, 2006). They are applied especially to develop instructional skills and reflective practice through different levels of teaching (Klenowski, Askew, & Carnell, 2006). Moreover, Burner (2014) in a review of portfolio assessment also found benefits of this method to pupils' learning, like the development of writing skills, autonomy, and an increase in motivation. Portfolio as an assessment method has been a focus of increasing interest in existing literature, due that it is recognized as fair, useful, and relevant (Joosten-ten Brinke, Sluijsmans & Jochems, 2010; Fernandes, 2020), since it encourages, among other things, interaction, and collaborative work (Lam, 2016). Light and Cox (2003), regarding the use of project, state that the use of this method fosters independence, improves management skills, supports deep learning, and offers problem solving (Pereira, 2016).

The open-book exam is a kind of evaluation where textbooks or other types of written materials are allowed as support (Light & Cox, 2003). As a method, the open-book exam allows pupils to creatively use the acquired knowledge to apply deep reflection and critical thinking, rather than simply recalling information or using what they remember (Brown & Glasner, 1999; Williams & Wong, 2009). "At the same time, the open-book exam encourages students to conduct a deeper study of the content, assess their learning gaps during exam preparation, self-evaluate their preparation results, and reduce stress" (Marcano et al., 2023, p. 210).

Prior-notice exam (Light & Cox, 2003) involves the use of questionnaires or topics to be addressed in the exam. They are presented to the learners previously, allowing them to perform pre-

research concerning the topic/theme, reviving memory limitations, and promoting learner autonomy. Nevertheless, this type of method could be harder and provoke feelings of anxiety in those pupils identified as dependents. Brown (1999, pp. 9-10) enriches this role of alternative exams with take-away papers; case studies questions; objective structured clinical examinations; simulations (computer or online); in-tray exercises; and assorted questions exams' (e.g., multiple-choice, short and essay questions in the same exam) (Fernandes, 2020).

Problem-based learning, as a representation of a learner-centered assessment, grants the development of these skills in contextualized environments (Dochy et al., 1999; Boud, 2000; Pereira, 2016). According to Biggs (1999), Problem-Based Learning (PBL) is perhaps the strongest example of an associated system. On the one hand, the learner generates meaning through valuable learning activities, and, on the other hand, the teacher adjusts the instructional and assessment methods to learning activities. In PBL, pupils encounter problems linked to their learning focus and look for solutions, distinguishing the necessity for teamwork and collaboration of all the parts involved. It grants the integration between theory and practice, an active instructional approach, the development of transversal curriculum skills, and a deeper understanding of the subjects under study (Vilaça & Mabote, 2016; Fernandes, 2020).

Published research carried out by Melovitz, Defouw, Hooland, and Vasan (2018), where different methods of assessment have been compared, found that learners achieve better outcomes when they are assessed by open-ended questions rather than by multiple choice questions and that open-ended questions encouraged conceptual understanding and deeper learning.

As asserted by Pereira, Cadime, Brown & Flores (2021) in their research on assessment methods, engaging pupils in alternative methods of assessment will lead to an increased perception of it as being interesting and fair. This is an affirmative reason for going towards greater diversity in assessment methods in education as such diversity will be seen as having greater legitimacy and possibility for learning. In addition to facilitating the knowledge about assessment in education, the minor or trivial differences that appeared concerning gender, year, and study cycle indicate that institutions do not need to worry about these factors in terms of their assessment policies and practices. What matters to many of these students is transcending beyond traditional methods of assessment across the total of levels and kinds of study towards learner-centered assessment.

Classroom assessment

Teachers are an essential part of classroom activity systems and assume a crucial role in lowering the opportunity gap for learners from non-dominant communities. For example, instructors can intensify the possibilities for marginalized students' involvement by creating or selecting classroom assessment tasks that students can relate to, can also reshape the elements of activity systems, like tools, resources, and participation structures, to maximize accessibility and opportunity for segregated pupils and educators can increment the affordances of marginalized learners' participation by attending to their historic connection with the disciplines, people, and environment (Kang, 2018; Kang & Furtak, 2021).

Classroom assessment is a process that provides teachers and students the possibility to collect, interpret, and employ evidence of pupil learning "for a variety of purposes, including diagnosing student strengths and weaknesses, monitoring student progress toward meeting desired levels of proficiency, assigning grades, and providing feedback to parents" (McMillan, 2013, p. 4). Several of these goals are formative, for instance, monitoring performance to promote student knowledge acquisition. Others are summative, such as certifying accomplishment at the end of a reporting term (Andrade & Brookhart, 2020).

Classroom assessment appears to be "quite diversified and not well documented" (Gilles, Detroz & Blais, 2011, p. 721). It reveals teachers' values, perceptions, and experiences that are influenced by contextual variables, with a weight in the institutional environment, tradition, and assessment culture (Gilles, Detroz, & Blais, 2011; Fernandes, 2020).

Every classroom assessment practice reflects, at least implicitly, a theory of learning that guides the way assessment is developed and the significance assigned to assessment by both teachers and learners. Furthermore, each of the theories of learning proposes a method of regulation of the pupil's behavior and thought processes as he or she progresses, or fails to progress, towards a learning objective (Allal, 2019). The application of classroom assessment to encourage student learning is firmly assisted by today's educational research (Tierney, 2006).

Classroom assessment is an important part of the inquiry teaching and learning process (Black & Wiliam, 1998; National Research Council [NRC], 1999). Active, continuous classroom assessment is a complicated task that inherently needs a singular approach to teaching and learning that is taken by numerous science educators. Unfortunately, teacher preparation programs are not properly preparing teachers to successfully implement assessment to maximize teaching and learning (Stiggins, 1988; Wininger & Norman, 2005); thus, instructors arrive to the schoolrooms without knowledge of the

pedagogical effects of such practices (Tunstall & Gipps, 1996; Shepard, 2000; Buck, Trauth-Nare, & Kaftan, 2010). Classroom assessment context is thus believed to impact student behavior and learning (Gan, Hoi & Schumacker, 2019). Classroom assessment can be conceptualized as the formal and informal activities orchestrated by the educators to assess the students' knowledge under their pedagogical responsibility and to foster students' involvement in the assessment of their learning (via self-assessment and peer assessment) (Allal, 2019).

Earl and Katz (2006) asserted that there are three different but interrelated purposes for classroom assessment: Assessment *for* Learning (A*f*L), Assessment *as* Learning (A*a*L), and Assessment *of* Learning (A*o*L). Teachers require a different role according to the assumed purpose, different planning, and diverse application of assessment information. Classroom assessment methods are more strongly linked with students' experience of schooling than many other educational assessment methods since the learner is the recipient as well as the examinee (Kane, 2012). Hence, the current perceptions have emerged that classroom assessment can be more understood in the environment of how pupils acquire knowledge (Bransford, Brown, & Cocking, 2000; Andrade & Brookhart, 2020).

Conventionally, the summative function has been the focus of classroom assessment: on assessing learning, evaluating learning, employing the assessment evidence for judgements about learners' achievement, and describing these judgements. On the other hand, the formative function has also been applied: instructors have been using assessment for learning among the diagnostic processes, formative assessment, and feedback practices. Still, it is unusual to see assessment as learning, where pupils apply critical thinking about what they have learned (Earl & Katz, 2006; Fernandes, 2020).

In the context of a classroom grounded on a formative assessment, possibly every learning activity becomes an assessment opportunity that promotes pupils' learning (Ruiz-Primo, 2011; Pereira et al., 2016). The classroom assessment process uses diverse types of information, including reports from classroom exams and quizzes, short and long-term student performance assessment, informal observations, dialogue with pupils (classroom discussions), student self and peer assessment, and reports from computer-based learning programs.

The validity of assessment is ensured by the accuracy and interpretation of classroom assessment. Diverse factors are required for the validity of classroom assessment: (1) an precise analysis of all assessment elements; (2) a good match between the assessment elements; (3) ensuring that assessment is suitable to the objectives of the learning outcomes (content, thinking processes, skills, and attitudes); and (4) providing diverse opportunities for learners to show their achievements

(i.e., using a range of assessment approaches) (Earl & Katz, 2006). Finally, a first-class record-keeping is crucial for guaranteeing quality in classroom assessment: “The records should include detailed and descriptive information about the nature of the expected learning as well as evidence of students’ learning and should be collected from a range of assessments” (Earl & Katz, 2006, p. 11).

Even in regular classroom assessments, instructors must establish a measure of distance to guarantee that a new judgment is made based on criteria used to a specific circumstance, rather than one limited to past perceptions of the learner. Contrarily, they have no attestation that their observation and judgment make a fresh addition to the accumulated understanding they have of a pupil's ability (Loacker, Cromwell, & O'Brien, 1985).

Self-assessment

Self-assessment (Crisp & Lister, 2002; Taras, 2002, 2010; Sambell, McDowell, & Montgomery, 2013; Mumm, Karm, & Remmik, 2016) includes the learner in the learning process (Orsmond & Merry, 2013) and creates critical thinking skills (Fitzpatrick, 2006). Peer assessment (Crisp & Lister, 2002) allows students’ interaction (van den Berg, Admiraal, & Pilot, 2006; Vickerman, 2009) and generates formative feedback (Crisp & Lister, 2002; Hughes, 2011; Hernández, 2012; Mumm, Karm, & Remmik, 2016; Rakoczy et al., 2019; Ion, Martí, & Morell 2019). These methods are recognized as innovative or alternative methods for assessing students in educational settings. More needs to be known about the efficacy and importance of these methods in diverse contexts and programs (Pereira, Niklasson, & Flores, 2017).

Self-assessment is a vital element in formative assessment because it promotes in students the power of analysis to determine the quality of their work, refers to the participation of pupils in making judgements about their learning process, mostly about their accomplishments and the outcomes of their learning (Boud & Falchikov, 1989; Andrade & Valtcheva, 2009). Self-assessment is not new (Dochy, Segers, & Sluijsmans, 1999). Self-assessment is formative in that it supports the learning process and helps students to focus their energies on parts for enhancement. It may also be summative, either in the sense of learners taking the decision that they have acquired knowledge as much as they wished to in a specific area, or, in formal institutional contexts, it may contribute to the marks assigned to pupils (Boud & Falchikov, 1989). The stress here is about the word formative: Self-assessment is developed on drafts of works in progress to inform review and improvement: It is not a matter of having students determining their own scores. Conversely, Self-evaluation refers to

approaches that promote in the students the grading of their work, possibly as part of their final grade for a task or a class (Andrade & Valtcheva, 2009).

The fundamental reasons for involving pupils in careful self-assessment are to encourage knowledge acquisition and accomplishment, and to boost academic self-regulation, or the tendency to monitor and administer one's own learning (Zimmerman & Schunk, 2004). Research literature indicates that self-regulation and achievement are closely associated: Students who define objectives, establish attainable plans to achieve them, and monitor their progress tend to learn more and do better in school than those learners who do not worry about it. Self-assessment is an essential element of self-regulation because it involves awareness of the objectives of a work and checking one's progress toward them. As a consequence of self-assessment, both self-regulation and achievement can be improved (Schunk, 2003; Andrade & Valtcheva, 2009).

The support that self-assessment provides to the students' academic accomplishment was proposed to be achieved using self-regulation strategies, like the clarification of the learning goals, monitoring the learning process, and promoting self-reflection (Brown & Harris, 2013). It is commonly reported that self-assessment is related to academic achievement in the published literature (Topping, 2003; Brown & Harris, 2013) and in more empirical studies (Kissling & O'Donnell, 2015; Jay & Owen, 2016). Additionally, the strong connection between self-assessment and self-regulated learning is presented in the literature (Andrade, 2010; Panadero, Andrade, & Brookhart, 2018). Students' growth as independent and lifelong learners has been supported by the progressive use of self-assessment as a required learning and assessment strategy in educational contexts (Boud, 1995; Andrade & Du, 2007; Yan & Brown, 2017; Bourke, 2018).

Self-assessment can include a lot of activities, from simple self-grading/self-rating without the need for any reflection to allow learners to undertake comprehensive reflection on their own performance (Brown & Harris, 2013). In fact, self-assessment can appear as a learning strategy to promote student learning or an alternative assessment method for summative purposes (Panadero, Brown, & Strijbos, 2016; Yan, 2018).

In self-assessment learners must reflect about what they have accomplish in terms of some evaluative criteria, pupil self-assessment is an real strategy for engaging learners in self-monitoring, as "self assessment is integral to a mastery goal orientation, for it is a skill that enables students to know how well they are progressing in their knowledge and skills" (McMillan & Hearn, 2008, p. 43). Self-assessment not only induces students' active participation in their process of learning, but it also supports educators with opportunities to gain instructional feedback from pupils (Walser, 2009).

However, although self-assessment can be an effective pedagogical device for motivating students' engagement in learning, it does not necessarily generate an authentic measurement of students' cognitive learning due to the capability for learners to present their learning erroneously (Sitzmann, Ely, Brown, & Bauer, 2010; Wei, Lundy, & Wilson, 2019).

There seem to be at least two principal reasons for instructors to promote student self-assessment; one is primarily educational, the second is often out of convenience. First, there has been a principled desire by the side of the educators for pupils to assume greater responsibility for their own knowledge acquisition through involvement in an essential act of learning: assessing one's competence. Secondly, there exists a practical need to develop assessment procedures that are a more efficient use of materials through using learners more and teachers less in assessment activities, or, at least, reshaping teacher effort from grading to planning and moderating assessment tasks. This last intention is often shared with elements of the first (see, for example, Boud & Holmes, 1981; Boud & Falchikov, 1989).

The effective accomplishment of any assessment procedure relies on the marking criteria applied (Orsmond et al., 1996; Orsmond, Merry, & Reiling, 1997). Self-assessment supports students to regulate their learning by monitoring learning processes and achievements against objectives and standards (Panadero, Brown, & Strijbos, 2016). The formative use of self-assessment, as a strategy for learning, may have great educational value for the learning process of the student (Boud, 1999; Yan & Brown, 2017). It has been increasingly accordance that self-assessment is a process that can be analyzed and learned, rather than a one-off final action (Boud, 1995; Andrade, Du, & Wang 2008; Yan, 2018; Yan & Brown, 2017). In self-assessment, the accomplishment of some distance is even more of a challenge. The effort to situate oneself outside of one's own performance to get another perspective on it is essentially what promotes learning to assess oneself such a long and complex process. Practice – in looking at pieces of evidence of one's performance and in general refining of one's capability to monitor and judge on base of a criterion– makes self-assessment more attainable (Loacker, Cromwell, & O'Brien, 1985).

Peer assessment

Peer assessment differs from self-assessment in the way that it provides the opportunity to learn from a diverse number of voices (Nortcliffe, 2012). The relationship between peer assessment and self-assessment is very close; i.e., the learning of assessment skills is relocated to creating and regulating one's work (Dochy, Segers, & Sluijsmans, 1999; Hinett & Thomas, 1999; Gibbs, 2006; Nicol

& Macfarlane-Dick, 2006; Nicol, 2013). Nonetheless, as Karandinou (2012, p. 57) points out, “peer assessment is generally more successful than self-assessment”. A generous approach with assessment and the lack of competence to learn criticality skills are obvious with self-assessment (Boud, 1986; Topping, 1998; Miller, 2011; Carnell, 2016).

Peer assessment can be identified as a kind of collaborative learning (Falchikov, 2001), but is more restricted. It just means that learners assess each other’s task applying relevant criteria, and provide feedback, not only for the interests of the receiver but also for their own development (van den Berg, Admiraal, & Pilot, 2006). However, peer assessment is a pivotal component in the design of learning contexts implementing a more collaborative culture of learning (Kollar & Fischer, 2010).

There is a plethora of evidence about how peer assessment increases the effectiveness and quality of learning (Topping, 2009), which is at least as good as gains from instructor assessment, especially about writing. Significantly, there are benefits from functioning as either a mentor or mentee (Topping & Ehly, 1998; Topping, 2005, 2009). These benefits can involve high levels of time on task and practice, along with a greater sense of accountability. Formative peer assessment is likely to integrate intelligent questioning, accompanied by increased self-disclosure and, thereby, assessment of understanding. Moreover, peer assessment can allow prior error and misconception identification and analysis, which may result in the identification of knowledge gaps and their closure. This method of assessment can also enhance reflection and generalization to new conditions, promoting self-assessment and better metacognitive self-awareness. Cognitive and metacognitive learning can be obtained before, during, or after the peer assessment process (Topping, 2009).

According to Dochy et al. (1999), Falchikov (1995), and Sluijsmans, Brand-Gruwel, and Van Merriënboer (2002), several problems might arise given the social context of peer assessment. The authors asserted that students show hostility towards peer assessment when they first experience it, a lack of confidence in themselves and the other peers as assessors, and friendship marking, where partners give their friends better scores than others, no matter how well they perform. Even though the various suggestions that interpersonal variables may play a substantial role within peer assessment, these have to date hardly been studied systematically (as shown by van Gennip et al., 2009; Könings, van Zundert, & van Merriënboer, 2019).

According to Williams (1992), students described peer assessment as interesting but felt uncomfortable doing it since they saw it as criticizing their classmates. The involvement of the staff or implementation of the assessments by groups of student peers are other alternatives to reduce

discomfort. The last would support the process by increasing anonymity, which is particularly essential among students from some contexts (Freeman, 1995).

Somervell (1993) claims that on one side of the spectrum, peer assessment may include feedback of a qualitative nature or, on the other, may involve learners in grading. The assessment characteristics may be formative or summative and could form a segment of a significant scheme through which peer feedback is provided before self-assessment by the recipient of the feedback. The same author asserted that peer assessment is not just a grading process, but also a component of a learning process through which competencies are established. Peer assessment can be seen as an element of the self-assessment procedure and as a form of reporting self-assessment. The pupils have the chance to monitor their classmates throughout the learning process and often have a more specific knowledge of the work of others than do their instructors (Dochy, Segers, & Sluijsmans, 1999). Keaten and Richards (1993) present that peer assessment is a practice that can encourage high rates of commitment among students, involving a fair and accurate position from the pupils when they make judgments regarding their peers.

In the words of Falchikov (1995), peer assessment is the process through which groups of individuals value their peers. This practice may or may not require previous discussion or consensus over criteria. It may include the use of rubrics or checklists, which have been created by others in the previous stages before the peer assessment practice or elaborated by the user group to achieve its specific needs (Dochy, Segers, & Sluijsmans, 1999).

Topping (1998, p. 250) identifies peer assessment as “peer assessment is an arrangement in which individuals consider the amount, level, value, worth, quality or success of the products or outcomes of learning of peers of similar status”. Nevertheless, some research studies have found that the effects of peer assessment are diverse: for instance, peer assessment appears beneficial to the learning process (Davies, 2002). More exactly, it has been determined that peer assessment (together with self and co assessment) supports learners with the development of specific skills in areas like communication, self-evaluation, observation, and self-criticism (Dochy & McDowell, 1997; van Gennip, Segers, & Tillema, 2010).

Peer assessment includes the procedures where the students assess or are assessed by their peers (Topping, 2009; Könings, van Zundert, & van Merriënboer, 2019) and pupils learn together, receiving and providing feedback. A plethora of research has been published on the reliability and validity of peer assessment effects (Cho, Schunn, & Wilson, 2006; Li & Grion, 2019). However, lower priority attention has been provided to the learning results of peer assessment. However, positive

effects were found by diverse studies (Perera, Mohamadou, & Kaur, 2010). On the other hand, no effects were reported (Sadler & Good, 2006). There are a few groups of research studies about the effects of peer assessment, but most of these concentrate on a specific context, which makes them less generalizable to other settings (Li & Grion, 2019).

Even though the increased popularity of peer assessment in the educational setting has ignited extensive research (van Zundert, Sluijsmans, & van Merriënboer, 2010; Ashenafi, 2017), investigations on peer assessment skills frequently choose the assessee, that is, the receiver of the peer feedback, as their focus of study. As such, these investigations analyze how feedback from the assessor (the feedback giver) impacts the assessee's use of feedback and learning acquisition (e.g., van Gennip, Segers & Tillema, 2009; Gielen et al., 2010; Patchan et al., 2013; Çevik, Haşlaman, & Çelik, 2015; Panadero, 2016; Könings, van Zundert, & van Merriënboer, 2019; Panadero & Alqassab, 2019).

Contemporary studies show that participation in peer assessment supports the enhancement of learning outcomes (Li et al., 2020), i.e., the value of assignments pupils submit after peer assessment and review.

In this context, some published studies reveal that both providing and receiving peer feedback bring benefits (Zhou, Zheng, & Tai, 2020); while others present that learners perceive that giving feedback to others helps more to their learning than the feedback they obtain from their peers (Ion, Marti, & Morell, 2019; Mercader, Ion, & Diaz-Vicario, 2020). These conclusions favor peer assessment as an operator of learning about tasks and a powerful self-evaluation aid (Stančić, 2021).

Peer assessment is appropriate mainly in problem-based learning (Segers & Dochy, 2001). Peer assessment has appeared increasingly in education, supporting the development of active learning and student-centered approaches, including group work (King & Behnke, 2005), problem-based and cooperative learning (Dochy, Segers, & Sluijsmans, 1999; van den Berg, Admiraal, & Pilot, 2006; Topping, 2009).

Peer assessment practices can differ in different ways, operating in several curricular areas or subjects. An extensive variety of products or outputs can be peer assessed, including writing, portfolios, oral presentations, test performance, and other skilled behaviors. The participant constellation can change: the assessors and the assessed may be pairs or groups (Topping, 2009).

Despite the benefits of peer assessment, it also involves implementation problems (Vickerman 2009; Lew et al. 2010). Furthermore, learners' perceptions of their learning context, including modes of assessment, impact their learning strategies and outcomes, thus also affecting the effectiveness of peer assessment (Segers & Dochy, 2001; Struyven, Dochy, & Janssens, 2005; Carvalho, 2013).

Certain challenges are still presented by these types of assessment; limitations of peer evaluation include students' reluctance (Topping, 2010), improper evaluation, and inconsistent evaluation in contrast to expert evaluation (Walvoord et al., 2008). Research literature has presented that some pupils performing peer-assessment provide unimportant or ambiguous comments that did not accept assessed students learn or enhance their performance. Other pupils intentionally provide poor assessments, with the intention that their assignment would get a relatively better score (Chen, 2010). Researchers suggest that before performing peer-assessment, educators should openly and thoroughly discuss the criteria for assessment with the learners. Additionally, they recommend that the lecturers should frequently monitor the assessment process to avoid students' unfair assessments (Planas-Llado et al., 2014; Seifert & Feliks, 2019).

Conversely, investigation also indicates that learners see peer assessment as stressful and unpleasant (Wanner & Palmer, 2018). The components that resulted from limit students' perceptions of peer assessment as useful are linked to the opinions of peer reviewers, e.g., disrespectful behavior (Zhou, Zheng, & Tai, 2020), the quality of the relationship among peers (Panadero, Romero, & Strijbos, 2013), lack of confidence in one's abilities or those of classmates to assess (Liu & Carless, 2006; Peterson & Irving, 2008; To & Panadero, 2019), and capacity and insufficient preparation for peer learning (To & Panadero, 2019). These are mostly strengthened if peer assessment is applied for summative purposes or is limited to just assigning grades (Liu & Carless, 2006; Ashenafi, 2017; Zhou, Zheng, & Tai, 2020; Stančić, 2021).

In general, formative peer assessment is recognized as a crucial counterpart to self-assessment (Black et al., 2004; Reinholz, 2016) and a kind of collaborative learning (van Gennip, Segers, & Tillema, 2010). Many scholars acknowledge the high capacity of peer assessment in promoting self-assessment, self-regulation, and whole learning (Boud, 1995; Dochy, Segers, & Sluijsmans, 1999; Panadero, Jonsson, & Strijbos, 2016; Reinholz, 2016; To & Panadero, 2019). Namely, by applying their comprehension of standards of good work to give peer feedback, pupils improve their awareness and understanding of the grading criteria and are challenged to grade their own work in a better reflective way, i.e., to practice self-evaluation skills (Reinholz, 2016; Stančić, 2021).

Some empirical studies highlight that peer assessment applied anonymously provides diverse rewards in terms of student learning. Namely, in such an environment, pupils provide their partners with more significant feedback but also report greater learning benefits (Panadero & Alqassab, 2019; Li et al., 2020). It is also discussed that anonymity permits students to overcome their first feelings of anxiety associated with the assessment of their peers' work (Vanderhoven et al., 2015; Seifert & Feliks,

2019). This accounts for the increasing number of research studies linked to computer-assisted and online peer assessment (e.g., Seifert & Feliks, 2019; Li et al., 2020), given that such conditions promote anonymous reviews (Stančić, 2021).

During the application of any of the assessment methods, whether self-assessment, peer assessment, and group assessment, none of which need to be observed as a “quick fix”, because they take considerable briefing, training, and rehearsal if they are to be useful, but can, when properly managed, save some staff time and they are very valuable in supporting pupils understanding of criteria. As these methods also support students’ metacognition (that is, a means of learning about their learning), they are also very powerful in encouraging deeper learning (Brown, 2005).

Group assessment

Group-based assessments have been widely suggested with the aim of developing the skills necessary for the labor world (Tumpa et al., 2022). Moreover, group-based peer assessment is commonly employed for formative rather than summative evaluation; however, it is conceptualized that group collaboration after individual assessment would increase scoring validity (i.e., improve the accuracy of student-given marks compared to instructor-given marks). Group assessment can also reform negative student conceptions about summative peer assessment (Topping, 1998). Apart from hypothetically enhancing grade reliability and pupil satisfaction through peer assessment, group work has many widely recognized potential advantages for student learning acquisition (ArchMiller, Fieberg, Walker, & Holm, 2017).

The 21st-century skills, like communicative interaction, team building, problem resolution, collaboration, innovation, and technical capacities (van Laar et al., 2020), are cultivated through actively engaging in group work assessments (Huff, 2014; Davies, 2009).

Online assessment

Online and blended learning have become popular in 21st-century educational settings. “Technology can certainly help by automating some aspects of assessment such as marking and feedback” (Pauli & Ferrell, 2020, p.14). However, Searle, Elrofaie, Kirkpatrick, Sauder, and Brown (2017) suggest that mentors are necessary to support teachers and learners in using the possibilities offered by technology and resolving technological and practical issues. The latter can lead to improvements in student understanding and the provision of time and expertise for the teacher to

engage in more valuable human activities that ensure assessment is for learning and not simply of learning (Pauli & Ferrell, 2020).

Some authors (Vonderwell et al., 2007; Wolsey, 2008) have confirmed the pedagogical prospective of online formative assessment. However, it is also of supreme relevance further make sure that the educational setting offers the pupils enough opportunities to not only acquire knowledge actively but prospects to take part in learning which emulates their real-world professional contexts (Baleni, 2015).

The integration of formative assessment with technological perceptions conveys the concept of online formative assessment in unfolding this integration. Pachler, Daly, Mor, & Mellar (2010) used the term formative e-assessment which they described as:

the use of ICT to support the iterative process of gathering and analyzing information about student learning by teachers as well as learners and of evaluating it in relation to prior achievement and attainment of intended, as well as unintended learning outcomes (p. 716).

In this sense, Pachler et al. (2010) and Wang, Wang, and Huang (2008) suggested a refocused emphasis on online formative assessment with the objective to promote learner and assessment centered learning environments.

A review of the literature did not present any analysis of online formative assessment (Gikandi, Morrow, & Davis, 2011). However, it is acknowledged that computers have been applied to facilitate educational assessment since the 1950s, for instance, using games and puzzles, multiple choice questions and essay-style tests (Burkhardt and Pead 2003; Gardner, O'Leary, and Yuan 2021).

According to Bearman, Nieminen and Ajjawi (2023, p.292) "Some kinds of assessments are no longer relevant to contemporary workplaces which are immersed in digital technologies". However, in online education emphasis continues to be placed on summative assessment with formative assessment receiving scarce attention despite its pivotal role in promoting learning (Wang, Wang, & Huang, 2008; Pachler, Daly, Mor, & Mellar, 2010; Mimirinis, 2019).

E-Assessment is implemented in both K-12 and tertiary education (Lynch, 2020). It has called for increased interest in academic circles as a result of both the changing nature of education and expectations for e-assessment practice (Nicol, 2007). Additionally, "E-assessment typically seeks to improve assessment designs through the use of innovative digital tools" (Bearman et al., 2023, p.291). Whitelock (2009) refers to other important factors in the interest in research of e-assessment

associated with its potential and to the challenges facing today education. For instance, the author points out the relevance of the tests being fair and of not disadvantaging students with e-assessment process. Moreover, she highlights the necessity for research related to pedagogical principles, designs, and frameworks to exploit all the potential of e-assessment for students' learning and teachers' work (Stödberg, 2012).

Provisional closure of educational institutions was imposed to contain the spread of the COVID-19 virus and reduce infections (UNESCO, 2020), both students and teachers have had to adapt quickly to online modes of teaching and learning" (Chan, 2023, p. 2). Moreover, "assessment gained another prominence" (Pinheiro, 2022, p. 75). As a result, around the world many educational institutions have already migrated traditional classroom setups with innovative flexible learning strategies since these are found to improve pupils' learning accomplishments (Kim, 2020). E-learning tools have played a pivotal role in the pandemic, helping educational institutions to make easy student learning during the lockdown of education settings (Subedi et al., 2020; Pokhrel & Chhetri, 2021).

Even though the massive development of e-learning and its apparent advantages in education, there are plenty of barriers that affect online assessment. Multiple difficulties have been appearing (Abduh, 2021). According to Holmes & Gardner (2006), the shift from a physical classroom to a virtual class has changed traditional techniques and assessment methods. The same authors described some variables affecting e-learning assessment like little or lack of contact with educators, inability to navigate within the platform, limited tech-experience, lack of valid interaction and appropriate feedback (Holmes & Gardner, 2006). E-assessment has been a challenging process in the way that it needed applying a framework that should be effective and reliable. Several challenges have been faced by educators questioning the effects of the shift from face-to-face learning to full-time e learning (Yadav, Gupta, & Khetrapal, 2018; Abduh, 2021).

1.1.7. Feedback

Feedback is seen as a crucial component in quality teaching in so far as pupils acquire knowledge quicker and in a more effective way when they become conscious of what they have to learn and to do to enhance their learning (Ramsden, 1996; Carless, 2006; Pereira, 2016).

Feedback defined as one of the vital features of a learner-centered approach is a critical component of the assessment process (Nicol & Macfarlane-Dick, 2006; Price et al., 2010; Pereira, Flores, & Barros, 2017). Several studies have analyzed diverse characteristics of student feedback but, interestingly, they generally do not define the term "feedback" as it applies to assessment. Yet, there exists some evidence that there are various conceptions of what comprises feedback (see, for example,

Black & William, 1998; Watty, 2013). Apart from that, feedback is an opportunity for pupils to learn allowing the regulation of the learning process (De Weert 1990; Taras, 2002; Poulos & Mahony, 2008; Pereira et al., 2016; Pereira, Flores, & Barros, 2017) and may assist students' learning (Weurlander et al., 2012; Mumm, Karm, & Remmik, 2016), in particular when the commentaries are provided personally and are on time (see Mumm, Karm, & Remmik, 2016). Formative feedback is fundamental but needs to be complete, comprehensive, significant to the individual, equitable, challenging, and supportive considering strategies for providing feedback efficiently such as assignment return sheets, assignment reports, in class collective feedback and other means (Brown et al., 1994; Brown, 2005).

Formative feedback is also a pivotal feature of the assessment methods that entail students' participation and collaboration and better contact between pupils and educators (Flores et al., 2015). Feedback underlines the centrality of the learner role and the application of comments to improve subsequent work (Carless & Boud, 2018). Feedback is thus considered as an important component of student learning process and student self-regulation (Carless, 2006; Nicol & Macfarlane-Dick, 2006; Carless et al., 2011).

A formative conception of assessment respects the key role of feedback in learning. Literature has clearly pointed out that feedback promotes knowledge acquisition and accomplishment (Butler & Winne, 1995), yet most learners get limited informative feedback on their task (Black & Wiliam, 1998).

According to Brown (1999), feedback should have three components. First, it is crucial to emphasize what is going to be assessed and the standard needed in a clear way for pupils and teachers. Second, a judgement of the students' work must be delivered. Third, the feedback provided to the learners may support them to path the way between what is known and expected from them. Common assessment practices are generally beneficial at evaluation, but they are often lacking in description and fail to provide pupils with advice and help to enhance their own knowledge acquisition (Brown, 1999). Moreover, the acknowledgment of feedback as a process of communication between educators and learners is required (Higgins et al., 2001) and should be in form of assessment dialogues in an attempt to make clear the assessment process (Carless, 2006; Hernández, 2012). For instance, if assessment is to be fundamental to learning, feedback must be at the core of the process (Brown, 2005).

Hattie and Timperley (2007) state that the principal purpose of feedback is to highlight the difference between current view and performance on one hand and the learning objective on the other, and to motivate and enable learners to reduce the discrepancy. In the same line, Shute (2008, p. 154

as cited in Rakoczy et al, 2019) describes formative feedback as “information communicated to the learner that is intended to modify his or her thinking or behavior for the purpose of improving learning.”

Feedback is evidence that gives the performer with direct usable insights into his/her current performance, derived from real differences between current performance and the pupil's hoped for performance. It is still the case that too many scholars believe that a score, and a short series of commentaries, generally of a simple praise or blame nature refers to feedback, when what learners want, is user friendly information, linking to how they are doing and how specifically they would be able to improve upon what they are doing (Stefani, 1998).

Some indicators were underlined by Wiggins (1993) of what it might mean to give good feedback on learning. It is of high value to recognize that these indicators have the same importance for all assessors in assessment partnerships:

- Define the requirements of each learning task;
- Describe clearly how performance will be measured/graded/assessed, preferably involving students in this process;
- Provide well-articulated descriptors or exemplars of different levels of attainment;
- Provide feedback about individual performance expressing this in accordance with agreed criteria;
- Relate various aspects of poor performance to specific remedial actions.

When feedback is understood as a chance to acquire knowledge rather than the indicator of classification in class or percentage of correct options, then it points to singularities' and illuminates the details for weaker aspects of the pupil's performance. It shows the learner the origins of strengths. It indicates where to aim to develop an ability in more detail.

Feedback can be given at the work level (information on task performance), process level (information on processes required to master the task), self-regulatory level (information on the regulation of action), and self-level (information on the learner as a person, not related to task performance (Hattie & Timperley, 2007). While feedback at the first three levels is related with favorable learning outcomes, feedback at the self-level, generally involves too little task-related information to present positive effects on the process of learning (Hattie & Timperley, 2007; Rakoczy et al., 2019).

According to Zimmerman (2000), self-regulated learning is the degree to which pupils meta-cognitively, motivationally, and behaviorally handle their own educational process. In particular, students are motivated and metacognitively aware of how they are able to regulate their learning by actively implementing strategies to develop explicit learning tasks. Moreover, Zimmerman (2002)

defined the process of regulating one's own learning in three cyclical self-regulatory phases: (i) the forethought phase, during which students set the goals and plan before a task; (ii) the performance phase, in which students supervise and control their performance while they are working on the task, and (iii) the self-reflection phase, in which students react to their own accomplishments once the process of learning is completed. These phases may help elucidate pupils' recurrent efforts to learn in terms of quantitative and qualitative differences (i.e., proactive vs. reactive self-regulators) (Pereira et al., 2016).

Feedback, which can be produced internally or externally aids in modelling and modifying the attitudes of the students' attitudes toward learning (Butler & Winne, 1995; Pereira et al., 2016). To offer feedback to learners' performance (external feedback) may support them to reflect on their competencies, learning and strategies in order to solve the tasks provided. The internal feedback gives the pupils evidence about the quality of the process of learning as well as the nature of the outcomes. This type of reflection – internal feedback – may be useful for learners to correct to the present task. Therefore, feedback is part of the self-regulated learning process, and it is conceptualized as a device which monitors the whole process without which it would be no possible to see the progression in terms of learning (Butler & Winne, 1995; Pereira et al., 2016).

In a more recent study from Dawson et al (2019) which was based on 406 staff and 4514 learners questionnaires, presented four major kinds of feedback categories regarding their purposes, i.e., "identify strengths and weaknesses", "affective", "justify grades" and "improve". Feedback used to "identify strengths and weaknesses" is like the conventional model of feedback where pupils are told what is good and bad about their work instead of how to improve. "Affective" feedback is to recognize learner efforts and encourage them, whereas "justify grades" feedback is implemented to describe students' grades. Under the "improve" category, apart from "unspecified improvement". Dawson et al (2019) presented five foci, i.e., "improvement in work", "improvement in understanding (such as standards and learning objectives)", "improvement in grades", "improvement in study strategy" and "improvement in reflection, self-evaluation or critical thinking" (as cited in Chan & Luo, 2021).

The signification of feedback has been modified over recent decades, making it difficult to get a real understanding of what involves feedback. In general, three paradigms have supported to how we interpret and understand feedback – (1) teacher-centered transmission-oriented paradigm; (2) student centered process-oriented paradigm; and (3) ecological/sociomaterial paradigm (Chan & Luo, 2021).

Applying feedback-as-event, as the moment of teaching, also requires considerable creativity on the part of the instructor and systematic study of the most effective feedback activities on the part of the

work (Loacker, Cromwell, & O'Brien, 1985). Pupils require feedback when their work is well done, to guide them to interpret what is good about their task and how they can create it and develop further. No one can pretend this is a simple task. Summative feedback, which enables judgements to be made for progression and completion, needs quite clearly and overtly link to the assessment criteria and to be strongly connected to the curriculum goals (Brown, 2005).

Pupils value the feedback they receive about their accomplishment and knowledge (Craddock & Mathias, 2009; Blair, Wyburn- Powell, Godwin, & Shields, 2014). Nevertheless, the effectiveness of feedback does not always happen (Price, Handley, & O'Donovan, 2008) resulting in learners' disappointment (Price et al., 2011) which may be associated with problems of content and understanding of feedback (Higgins, Hartley, & Skelton, 2001). Current research shows the existing gaps on feedback effectiveness. In a review on assessment feedback from Li and De Luca (2014) it was found that feedback is not always applied by the learners. Additional research studies present that although feedback provided to the learners may be meaningful (Jessop & Maleckar, 2014), it is not always identical with valued feedback to them (Blair & McGinty, 2013; Pereira et al., 2016).

To sum up, a substantial challenge in reference to assessment and feedback is that they need to be understood or applied in ways that support the enhancement of teaching and learning. Given that pupils are "active makers and mediators of meaning within a particular learning context" (Higgins et al., 2002, p. 53) and the pivotal role that assessment and feedback assume in the process of education process, it requires to develop a better understanding of students' conceptions of the whole purpose of assessment and feedback and their perceptions of their effect on them. Feedback is a special area for educators to extend their assessment practices, as it is one of the most significant elements on students' knowledge acquisition and accomplishment (Pedrosa-de-Jesus et al., 2019).

"Technology mediated education brings new opportunities to provide personalized feedback through the analysis of learner trace data" (Dawson et al., 2023, p.580). Moreover, giving valuable online feedback is an imperative skill for instructors to develop because it helps the pupil's development (Leibold & Schwarz, 2015). Effective feedback is useful, which implies enhancing performance by rectifying mistakes (Zohar & Smith, 2009) using a constructive, future-focused, helpful manner. Additionally, feedback can be educational, or it can be informational and instructional (Hattie & Timperley, 2007). When feedback takes on a corrective meaning, then it also turns as instructional.

Research about the kind of feedback that is the most valuable for learners associated to writing in online programs is expanding in volume. According to Wang, Derakhshan, Pan & Ghiasvand, (2023, p.1) "writing needs teacher literacy and effective feedback during instruction and assessment". Alvarez,

Espasa, and Guasch (2011) investigated kinds of feedback for writing tasks in an online learning environment and found four kinds: corrective feedback, epistemic feedback, suggestive feedback, and epistemic plus suggestive feedback. Corrective feedback is the feedback that is specific to the needs of the task and content. Epistemic feedback involves prompts or questions for additional thought and clarification or clarification. Suggestive feedback covers advice, expansion, or ideas to make an idea better and integrates the use of prompts/questions for supplementary development and providing suggestions for enhancement (Leibold & Schwarz, 2015). "With the various modalities available for providing feedback, more research is needed to determine how these options may impact instructors' responses to writing, and subsequently students' experiences with feedback" (Cunningham and Link, 2021, p.2).

From more than a decade, assessment feedback practices in educational settings have gained a wealth attention within educators and researchers. This can be partially associated to discouraging reported findings of national surveys in Australia and the United Kingdom, which underline that pupils are often disappointed with feedback commentaries (for example, Carroll, 2014; Higher Education Funding Council for England, 2014). Negative commentaries can be unfavorable to learner enthusiasm, performance, and affect, particularly in pupils with low self-efficacy (Hattie & Timperley, 2007; Treglia, 2008; Young, 2000). Pupils' positive and negative responses to feedback rely on multiple elements (Cunningham and Link, 2021). As for learner's discomfort with feedback, it is due to problems with the content itself (e.g., ambiguous, unclear, or unspecific comments) (Huxham, 2007), timeliness (e.g., it occurs too late in a subject to be used) (Hartley & Chesworth, 2000), and impact – e.g., the commentaries received are not appropriate to a subsequent assignment (Boud & Molloy, 2013). Furthermore, dissatisfied instructors may point to increasing workloads (Gibbs & Simpson, 2004), or students' resistance to use feedback (Winstone et al., 2017).

Regardless of the wealth of research and considerable investment by educational institutions, feedback still is poorly appreciated and executed by both educators and students (Carless & Boud, 2018; Dawson et al., 2019). Some authors recommend focusing on the attributes of the feedback data (Rust, 2007; Price et al., 2011), the performers involved (Nicol et al., 2014), or support student-centered models of feedback design (Boud & Molloy, 2013). Other scholars focus on learners' characteristics, like self-regulation (Nicol, 2009) and feedback literacy (Carless & Boud, 2018), or on educators pointing to the expanding tensions and expectations on those who may not have adequate resources or training (Gibbs & Simpson, 2004; Boud & Molloy, 2013). Conversely with these focal points on feedback practices and individual skill, some academics take a broader view and claim that

policy frameworks and organizational cultures require to be developed to encourage valuable feedback (Crisp, 2007).

In summary, in this chapter the essential aspects on which our main research study was based were addressed. First, the historical context about evaluation was reviewed. Then, we turned to discuss the conceptions of assessment of the different actors involved in this research, specifically, teachers (and directors and sub-directors, who are also, in the first instance, teachers), and students. Also, the methods of assessment were mentioned indicating its applicability in specific terms. Assessment of learning entails a way to demonstrate achievement; certification and accountability based on teacher-centered learning, using summative assessment as a way to compare, select and measure through the use of so-called traditional assessment methods (tests and/exams). The assessment for learning was also addressed, stressing the feedback on learning and teaching, focusing on self-regulation and improvement. Assessment as learning is perceived as a way of self-regulation and critically talking about metacognition, critical thinking, and self-assessment. These last two conceptions of assessment play a role within the scope of student-learning, using the formative assessment as a means to regulate, to monitor, to encourage, to improve and to support. In these kinds of assessment, portfolios, simulations, or projects appear as the most privileged and used methods.

CHAPTER II

THE RESEARCH DESIGN

Chapter II – The Research Design

This chapter involves the description and justification of the methodological options taken for the implementation of this study. First, the research questions and research goals are described. Secondly, the research design is presented as well as the research context and the participants. It also explains the processes followed during this study, like the sampling and selection strategies, the techniques, and procedures for data collection, namely the questionnaires and the interview. Then, the statistical data analysis processes, and the data analysis procedures are described. In this last part of the chapter, ethical considerations and the main limitations of the research are presented.

2.1. Research Goals

In the field of social sciences, research can take on a variety of distinct forms and be motivated by a range of different objectives. Based on a quantitative approach, some researchers try to measure and make sense of reality (Creswell, 1994). Other scholars concentrate on comprehending it (Alvesson & Sandberg, 2013a), and some of them try to articulate and/or integrate both perspectives through a common study (Bryman, 2006; Clark & Ivankova, 2016). Particularly in mixed methods research, the research purpose and goals are essential because they set up a foundation for combining quantitative and qualitative methods to achieve a particular goal (Teddlie & Tashakkori, 2009). The research purpose is a declaration of intent which identifies the objectives that researchers plan to accomplish by conducting a study (Clark & Ivankova, 2016).

This research aims to understand the assessment practices in the public education, considering the context of the secondary teaching. Despite the existence of studies in this field, more research is needed to understand the conceptions and practices of assessment from the perceptions and experiences of teachers and students in Ecuador. The review of the existing literature in the field of assessment in the public education system led to realize the existing gap in the approach to this theme, namely in the secondary education institutions of Ecuador.

The study's research purpose was refined into specific research questions. The formulation of careful grounded research questions is one of the most important aspects of the research process (Alvesson & Sandberg, 2013b). The research makes possible to develop knowledge about a specific theme or aspect of the social reality. Furthermore, by creating and formulating good and adjusted research questions the researcher may encourage reflection and intellectual activity (Alvesson & Sandberg, 2013b). Research questions may emerge from the literature review (Anderson and Arsenault, 1998) and should be able to generate useful knowledge to society and for the field of knowledge in which they are developed (Alvesson & Sandberg, 2013b).

Research questions should be open but also give guidance (Alvesson & Sandberg, 2013b) for the literature review, data collection, data analysis Bryman (2008), and may be quantitative or qualitative (Clark & Ivankova, 2016). In the mixed methods research, the research questions place the borders to the study, explaining the direction and influencing the selection of the methods for the research (Teddlie & Tashakkori, 2009; Clark & Ivankova, 2016). Research questions “must have a clear social scientific angle” (Bryman, 2008, p. 70). They can be quantitative questions and hypotheses that focus on the quantitative part of the study, or of qualitative questions, but can also be integrated questions (Teddlie & Tashakkori, 2009; Clark & Ivankova, 2016). An integrated set of questions addresses the goal of the study by combining quantitative and qualitative approaches (Clark & Ivankova, 2016). Moreover, “both qualitative and quantitative research questions (or hypotheses) need to be advanced in a mixed methods study in order to narrow and focus the purpose statement” (Creswell, 2009, p. 138). This study aims to answer the following research questions:

- 1) What are the conceptions and practices of assessment of teachers and students in the Secondary Education system of Ecuador?
- 2) How do teachers and students look at the methods and practices of assessment in the Secondary Education system of Ecuador?

Consequently, the following research goals have been established:

- a) To get to know the conceptions of assessment of Ecuadorian teacher from Secondary Education.
- b) To identify the assessment practices from the perspective of secondary teachers in Ecuador;
- c) To get to know the assessment methods used by the secondary teachers in their classrooms;
- d) To understand the ways secondary education teachers assess their students and their teaching practice in the classroom;
- e) To get to know secondary students ‘views about the most used assessment methods in the Secondary Education system of Ecuador;
- f) To identify the ways secondary education students define their assessment experience;
- g) To get to know how secondary education students relate the assessment methods and the way they learn.

Based on the presented research questions and objectives, more specific ones, and specific research goals, have been specified. The questions and goals are presented according to the sub-studies that integrate the broader research study (cf. Table 1)

Table 1

Specific Research Goals in each Sub-study

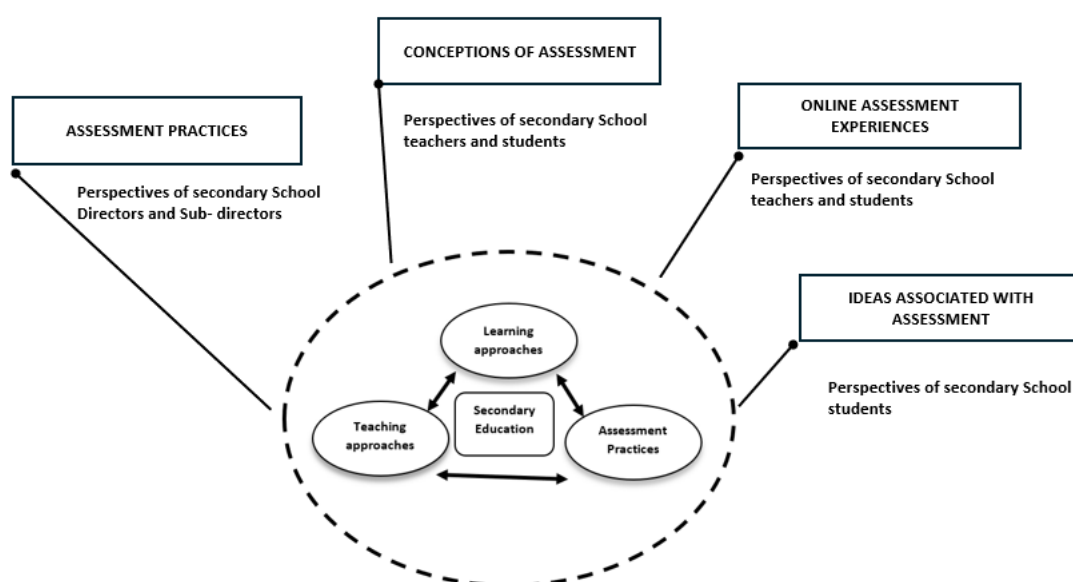
MAIN PURPOSES OF THE STUDY	SUB-STUDIES	RESEARCH GOALS
• What are the conceptions and practices of assessment of teachers and students in the Secondary Education system of Ecuador? • How do teachers and students look at the methods and practices of assessment in the Secondary Education system of Ecuador? • How do teachers and students define their assessment and feedback experience in the Secondary Education system of Ecuador during the lockdown of COVID-19?	SUB-STUDY 1 Ecuadorian teachers' conceptions of assessment and in secondary public education.	• To get to know the conceptions of assessment of Ecuadorian teachers from secondary public Education; • To understand the conceptions of assessment of Ecuadorian teachers from secondary public education.
	SUB-STUDY 2 Assessment and teaching in Secondary Education: views of the directors and sub-directors from Ecuadorian public schools	• To get to know the perceptions of secondary school directors and sub-directors about teaching, learning and assessment in Ecuador; • To understand the perceptions of secondary school directors and sub-directors about teaching, learning and assessment in Ecuador; • To identify the challenges about teaching, learning and assessment in secondary public education from the point of view of directors and sub-directors in Ecuador; • To identify the improvements to be developed in assessment in secondary public education from the perspective of the directors and sub-directors in Ecuador;
	SUB-STUDY 3 Ecuadorian students' conceptions of assessment in public secondary education.	• To get to know the conceptions of assessment of Ecuadorian students from secondary public education; • To understand the conceptions of assessment of Ecuadorian students from secondary public education.
	SUB-STUDY 4 Ideas and perceptions of assessment in public secondary schools of Ecuador: students' views	• To identify the most associated ideas with assessment from the point of view of Ecuadorian students in secondary education; • To get to know the most used assessment methods in Ecuador in secondary education; • To analyze the implications of approaches to assessment in Ecuador.
	SUB-STUDY 5 Practices of assessment and feedback during online teaching in the context of COVID-19: experiences of the Ecuadorian teachers from public secondary schools	• To get to know teachers' views on online learning as a result of the forced closure of the institutions during the Covid-19 pandemic in secondary public education in Ecuador; • To understand teachers' views of online assessment during lockdown; • To get to know teachers' perceptions about assessment methods used by them during lockdown; • To get to know teachers' perceptions about the means of providing feedback to during lockdown; • To understand the experience of online teaching and learning during lockdown;
	SUB-STUDY 6 Perspectives of assessment and feedback during online learning in the context of COVID-19: the views of the Ecuadorian students from public secondary schools	• To get to know students' views on online learning as a result of the forced closure of the institutions during the Covid-19 pandemic in secondary public education in Ecuador; • To understand students' views of online assessment during lockdown; • To get to know students' perceptions about assessment methods used by teachers during lockdown; • To get to know students' perceptions about the means of providing feedback to during lockdown; • To understand the experience of online teaching and learning during lockdown;

2.2. The research design

The mixed-method approach that guides this study is a combination of several methods and techniques, stages for the collection of data and sources (Flores, 2003; Fernandes, 2020). The research design or the plan to develop the scientific research implies the “intersection of philosophy, strategies for inquiry, and specific methods” (Creswell, 2009, p. 5). It addresses the conceptions of students, teachers, and directors and sub-directors about assessment and their assessment practices in the Secondary Education system of Ecuador. Furthermore, the aspects related to teaching, learning and assessment practices during the pandemic times in Ecuador were a focus of this research. The design for the study was based on the following guiding principles (cf. Figure 6):

Figure 6 :

Synthesis of the Guiding Design of the Research



(Source: Author)

In the classroom, teachers conduct their assessment practices influenced by their respective conceptions and purposes on assessment (Azis, 2015; Brown et al., 2019). Their personal conceptions may also have implications as to how they view learning (Brown, 2002). As illustrated in Figure 6, even though the research has primarily focused on the perceptions of secondary teachers and students on their conceptions and practices of assessment, it was decided to include the perspective of other stakeholders in the educational process, namely sub directors and deputy directors. This holistic

procedure involves the adoption of a methodology that promotes an understanding of the dynamic nature and complexity of the processes intended for the study (Flores, 2003).

2.2.1. Research Perspective

The paradigmatic framework is a thought choice for those who are leading the development of a research study. According to Guba and Lincoln (1994), a paradigm offers a perspective that specifies the nature of the contextualized world and the variety of options available to those who hold it regarding the reality. Hence, the characteristics of each paradigm are shaped by ontological, epistemological, and methodological considerations (Guba & Lincoln, 1994; Richards, 2003; Asghar, 2013).

The implementation of paradigms in a research study differs from one investigator to another depending on the selection the researchers do, and the origin of the problem being studied. Furthermore, the relevance of choosing a paradigm for scientific research is that the paradigm forms the basis on which research designs and methods are applied to the study (Easterby-Smith, Thorpe, & Lowe, 2002; Kankam, 2019). While a paradigm looks at how knowledge is perceived and analyzed, it clearly characterizes the aim, interest, and wanted results of the research study (Mackenzie & Knipe, 2006; Kankam, 2019). Theoretical concepts are used to provide explanations; in contrast, paradigms supply protocols to find explanations (Babbie, 2014; Kankam, 2019). The developmental process of a specific research study implies an analysis of the numerous possibilities that are available to researchers based on the paradigms. The selection of a specific approach requires a complete reflection on its philosophical, ideological, and epistemological assumptions (Flores, 2003; Fernandes, 2020).

It is known that the two main different ways of looking at and conceiving social reality are a positivist/objectivist conception, and an interpretive/subjectivist way (Cohen, Manion & Morrison, 2007; Bryman, 2008; Burton & Bartlett, 2005). Both of these paradigms have prevailed in the field of Social Sciences to show their divergent ontological and epistemological positions (Flores, 2003; Bryman, 2008; Flick, 2009; Coutinho, 2011; Smeyers & Smith, 2014). In this context, qualitative and quantitative researchers appear to have a discussion which is based upon the "differences in assumptions about what reality and whether or not it is measurable" and about how "we can best understand what we 'know' whether through objective or subjective methods" (Newman & Benz, 1998, p. 2).

The positivist paradigm, which is also identified as traditionalist, empirical-analyst, or empiricist (Latorre, Del Rincón, & Arnal, 1996; Usher, 1996; Mertens, 1998; Shaw, 1999; Babbie, 2014) suggests that the context to be studied is evident as considering as it that remains individually of the

subject - the situations in an organized way being conceivable the directions that rule them to anticipate and control them. According to Cohen, Manion & Morrison, (2007, p. 10), "the world exists and is knowable as it is". In this way, the positivist paradigm highlights determinism (there is a fact that can be found), coherence (there are no contradictions), unbiased (the more objective and less subjective the better) and even presumption (the ultimate end) of a research study is to discover generalizations that can be able of directing and predicting phenomena (Fernandes, 2010).

In general, the positivism paradigm idea inquires the process of collecting data, the observation of regularities, and the extraction of laws (Turner, 1992). Moreover, Aliyu et al. (2014, p. 82) argued that the methodologies frequently implemented by positivist researchers consist of: confirmatory analysis, nomothetic experiments, quantitative analysis, laboratory experiments, and deduction. Additionally, "the positivist paradigm emphasizes that factual, genuine, and real happenings can be observed and studied scientifically and empirically and could as well be elucidated by way of lucid and rational investigation and analysis" (Aliyu et al., 2014, p. 83). It is important to note that, in some circumstances, researchers who put in practice positivism typically tend to determine forecasts of human being manifestations to obtain deeper understanding of what constitutes truth (Grix & Watkins, 2010, Kankam, 2019).

The post-positivist paradigm is visualized as an addition to positivism by challenging the traditional positivist perspective (Creswell & Creswell, 2018; Panhwar et al., 2017). Post-positivism claims that the world is unclear and exposed to different perceptions (O'Leary, 2017) and aims to realize the phenomena in a holistic way while is adopting the scientific methodology (Cohen et al., 2018).

The interpretative research paradigm, settled on a qualitative approach (Creswell & Clark, 2007) It is based on the understanding of the phenomena, by uncovering the meanings through people 's experiences into a reality that is constantly changing (Fernandes, 2010). Qualitative research approach seeks to achieve the meaning or interpretation attributed (sometimes implicit) by the subjects themselves to the experiences that concern them and the "behaviors" they show (Lessard-Hébert et al., 1990).

Interpretivism, as stated by Aliyu et al. (2014, p. 84), "is a word that is quite new, however, simultaneously everywhere in the midst of non-positivist researchers and scholars". Bryman (2008, p.13) claims interpretivism research paradigm as "an epistemological position that requires the social scientist to grasp the subjective meaning of social action". In words of Cronje (2011, p. 3), "interpretivists believe that the human experience of the world is subjective, and they have a concern to

understand it as it is”, thus their aim is to describe situations. This paradigm explores the social dimension (Cohen & Crabtree, 2006; Creswell, 2007; Blaikie, 2010) giving the investigator a methodological, comprehensive understanding of the situation and enabling them gather large, complex information through the holistic dimension (Miles et al., 2014).

The interpretivist scholars, moreover, commonly rely deeply on the views of the world of participants of the phenomenon of interest being investigated (Creswell, 2003; Kankam, 2019). However, Bryman (2008) found some limitations respecting the qualitative study, just like the subjectivity, the need of straightforwardness and the trouble to replication and generalization (Pereira, 2016). Nevertheless, a combined approach of both paradigms has increased in acceptance and has been debated in social behavior and sciences behavior: the mixed methods research (Bergman, 2008; Bryman, 2008). This research integrates both post positivist and interpretivist paradigms considering them the most suitable to the proposed goals and purposes. Mixed methods study is being adopted, integrated to research practice, and highlighted as the third approach or paradigm to inquiry (Creswell & Plano Clark, 2007), as well as qualitative and quantitative research methods (Johnson, Onwuegbuzie, & Turner, 2007; Plano Clark et al., 2008). Mixed methods research is an approach to knowledge (theory and practice) that adopts multiple viewpoints, brings a variety of alternatives, perceptions, points of view, approaches, and standpoints (constantly involving the standpoints of qualitative and quantitative methods) (Johnson & Onwuegbuzie, 2004; Johnson, Onwuegbuzie, & Turner, 2007). Noting the complication of emergent research problems and the recognition of the existence of multiple ways of meaning, researchers see what is best described as a series of options (Palys, 1992). The mixed methods approach comes with benefits in so far as it draws upon the strengths and weaknesses of both paradigms producing a wider vision of the reality (Coutinho, 2011; Johnson & Christensen, 2012; Creswell, 2014) and providing the answers to the questions that the quantitative or qualitative paradigm itself cannot answer (Creswell & Clark, 2007). Overall, designing a study with a mixed approach allows the identification of what is better in quantitative and qualitative methods (Bergman, 2008). Respecting the relationship between theory and practice, this inquiry study considers both inductive and deductive assumptions (Babbie, Wagner, & Zaino, 2015). As argued Bryman:

Mixed methods research should not be considered as an approach that is universally applicable or as a panacea. It may provide a better understanding of a phenomenon than if just one method had been used. It may also frequently enhance our confidence in our own or others' findings (2008, p. 624).

Mixed methods in research designs have pulled in expanding consideration and notoriety in last years (Howe, 2004; Johnstone, 2004; Gilbert, 2006). Creswell (2003) points out that the use of mixed-methods approaches has come from the early 1960s, referring to the work of Campbell and Stanley (1963) and Glaser and Strauss (1968) as examples. Nevertheless, in areas like education and nursing, the studied experiences are complex, and tensions could occur over the effectiveness of both qualitative and quantitative approaches (McKim, 2017). Sandelowski (2000), for instance, cites that mixed methods research can spread the impact and improve the flexibility of research study designs, whilst Johnstone (2004) proposes that applying mixed methods research allows triangulation, complementation, or expansion of the contribution of a single approach (McKim, 2017).

As mixed methods research has increased in practice and acknowledgement, the simultaneous use of quantitative and qualitative strategies has required new ways of thinking about the philosophical underpinnings for integrative research (Wheeldon, 2010). Greene and Caracelli (1997) have highlighted several virtues, goals, or reasons for mixing methods. They incorporate the following: to assess the consistency of findings obtained through different research tools, to settle and produce on the results of one method with another, and to present how the products from one method outline consecutive methodological or research choices. Several views on this paradigmatic issue have been presented (Tashakkori & Teddlie, 1998; Greene, Benjamin, & Goodyear, 2001), and pragmatism has raised as a philosophical traditional alternative to the either/or choice of positivism and constructivism (Creswell & Plano Clark, 2007). Hence, rather than depending on deductive thinking and common premises to get explicit conclusions, or induction approaches while looking for general understanding based on specific premises, pragmatism admits for a more flexible abductive approach (Wheeldon, 2010). Abduction is vital in this context. During the process of an innovative combination of existing information, one can both produce potential research results and at the same time attempt to integrate various theoretical philosophies and approaches (Tomiya et al., 2003). In this context, abductive reasoning could provide possible elucidations and hypotheses to arise throughout the process of investigation based on the comprehension and inference of researchers (Schurz, 2002; Wheeldon, 2010). An additional value of mixed methods research is the integrative component. Integration offers the readers deeper confidence in the findings and the conclusions they present from the phenomenon of study (O'Cathain et al., 2010; McKim, 2017). It is practical to consider that mixed methods research also benefits researchers by eliciting novel ideas to address future research (O'Cathain et al., 2010). Moreover, researchers claim mixed methods research is the one and only way to be sure of findings (Coyle &

Williams, 2000) and the resulting interpretation (Morse & Chung, 2003; Tashakkori & Teddlie, 2003; McKim, 2017).

Figure 7 summarizes the three research approaches as a basis for the research process.

Figure 7 :

Guiding Principles of the Research Process

D E D U C T I O N	Quantitative Approach	Mixed Methods Approach	Qualitative Approach	I N D U C T I O N
	Positivist paradigm	Pragmatic paradigm	Interpretivist/Constructivist paradigm	
	Purpose • Test hypotheses/answer research questions. • Measure variables. • Generalize Results from larger sample.	Purpose • Combine strengths of both approaches • Provide comprehensive insights	Purpose • Explore phenomena • Understand Meaning • Develop theories	
	Data Collection • Confirmatory Analysis • Surveys • Experiments	Data Collection • Surveys and interviews • Experiments. • Confirmatory analysis • Documents • Observations • Focus groups	Data Collection • Interviews • Documents • Observations	
	Data Analysis • Statistical methods • Descriptive and inferential statistics.	Data Analysis • Statistical and thematic analysis • Integration of quantitative and qualitative data	Data Analysis • Thematic analysis • Narrative analysis • Grounded theory • Content analysis	
	Outcome • Numeric results. • Generalizable findings.	Outcome • Comprehensive understanding • Validation of findings through triangulation	Outcome • Rich detailed descriptions • Contextual insights	

(Source: Author)

The methodological design of this study integrates elements from the interpretative and positivist paradigms applying a combination of both quantitative and qualitative methods to provide comprehensive insights, broadly speaking, the assessment process in secondary education. The research process, on the one hand, allows the variables to be related to each other, from a quantitative perspective; and, on the other hand, from a qualitative perspective, the process and the context are emphasized. Mixed method research leverages the strengths quantitative and qualitative methods “allowing researchers to explore diverse perspectives and uncover relationships that exist between the intricate layers of multifaceted research questions” (Shorten & Smith, 2017, p. 74). In addition, they

can adequately answer research questions that neither quantitative nor qualitative methods could answer independently (Shorten & Smith, 2017).

2.3. Context of the study

The study focused on secondary public education, namely in the Third Year of “Bachillerato” in Ecuador.

2.3.1. The school system in Ecuador

Ecuador is an intercultural and plurinational country with slightly over 18,000,000 inhabitants. According to the National Institute of Statistics and Census (INEC, 2023a), over 63 % of the Ecuadorian population lives in urban areas. Further, Ecuadorians identify themselves as “mestizos” 77.5 %; “indigenas” 7.7 %; “montubios” 7.7 %; “afroecuatorianos” 4.4 %; “blancos” 2.2 % and others 0.1%. The population of “Indigenas” consists of fourteen diverse groups or nationalities (i.e., Awa, Achuar, Andoa, Chachi, Kichwa, Shuar, Tsáchila, Huaorani (Huaó), Siona, Secoya, Shiwiari, Cofán, Epera, and Záparos).

The Ecuadorian constitution recognizes that “education is a right of the people throughout their lives and an avoidable and inexcusable duty of the state” (Const., 2008, Art. 26). Also, “Education must be focused on human beings” (Const., 2008, Art. 27). Moreover, Ecuadorian education “must be intercultural, democratic and inclusive” (Const., 2008, Art. 28), because as is claimed by UNESCO, cultural diversity is a source of creativity and innovation, and its recognition encourages inclusion and social participation. Likewise, it is ensured that cultural diversity broadens the possibilities of choice offered to all and it is a source of development, understood not only in terms of economic growth, but also as a means of access to an intellectual, effective, satisfying, moral and spiritual existence (Delors et al., 1997).

The latter, as is stated by the United Nations (2015), provides support for the achievement of the right to ensure “inclusive and equitable quality education and promote lifelong learning opportunities for all”, which is aligned with the mission of the Ministry of Education:

To guarantee the access and quality of the initial, basic and bachillerato education for the inhabitants of the national territory, through the integral formation, holistic and inclusive for the children, teenagers and adults, taking in account interculturality, plurinationality, ancient languages, and gender from a perspective based on rights and duties to strengthen social, economic and cultural development, the exercise of citizenship and the unity in the diversity of the Ecuadorian society (MOE, 2023).

Since the approval of the Ecuadorian constitution from 2008, several educational initiatives have been developed to improve the quality of the education system and provide new educational experiences to the students from public schools that have been considered as low-income (Paladines, 2015). Initiatives like the implementation of a national evaluation system, a curricular reform, increased teacher wages, and plans to boost government spending on education to 6% of GDP were included (Isch, 2011).

According to the results from the last national census 2022, in Ecuador the national illiteracy rate went from 6.8% in 2010 to 3.7% in 2022. In this context, it is understood that the illiteracy rate has decreased by 3.1 percentage points. In other words, 199,484 (29.7%) individuals left this condition (INEC, 2023b). The Ministry of Education (2023) presents historical data from the same period 2010-2022 about the number of children registered into the national educational system. It shares that, during this period, fourteen scholar years have been developed, and it is highlighted the scholar year 2009- 2010 as the lowest point with 4.103.224 students, while the scholar year 2014- 2015 is considered the peak point with 4.728.582 students registered which means that 9 out of 10 children were enrolled into the educational system of Ecuador. Moreover, in the scholar year 2022- 2023, the number of children registered in the educational system was 4.268.722. It means 8 out of 10 Ecuadorians in the scholar age were studying. Additionally, data from the Ministry of Education (2024) shows that, in the school year 2023-2024, there were 4.202.798 students enrolled in the educational system.

In terms of promotion, retakes, and dropouts of the students during the period from 2010 - 2022, the Ecuadorian Ministry of Education (2023) reports that the scholar year 2009- 2010 is identified as the lowest point of this period in terms of promotion with 91.71% of the students promoted. Thus, the rate of no-promoted students was 3.95%, and the rate of dropouts was 4.34% which makes them the highest points from the analyzed period. On the other hand, in the school year 2019 -2020, ten years later the highest point of promotion was reached with 97.91%. As a result, the rate of no-promoted students 0.36%, and the rate of dropouts 1.73% are recognized as the smallest points from the reviewed period.

At present, Ecuadorian education is governed by the *Ley Orgánica de Educación Intercultural* (LOEI). The LOEI was published in 2011 and reformed in 2021. The structure of the national educational system of Ecuador provides in its formal modality the levels of “educación inicial, suggested for children between 3- 5 years old, “educación básica” suggested for children between 6 - 14 years of age and “bachillerato” suggested for teenagers aged between 15-17 years. In the school year 2023-

2024, the number of children attending the different levels of education was 323.325 (7.69%) students in “educación inicial”, 2.994.350 (71.25%) students in “educación básica” and 885.123 (21.06%) students in “bachillerato” (MOE,2024).

Third bachillerato

The level of “bachillerato”, which is composed of three years (1st, 2nd, and 3rd year of bachillerato), is the last level of compulsory education and can be imparted in the option of “bachillerato en ciencias” or “bachillerato técnico”.

When third year of “bachillerato” has been approved (in the Ecuadorian educational system the traditional threshold for passing a course is set at 7 of performance level) by the students, a degree of “Bachiller” is issued by the Ecuadorian Ministry of Education. Since the “Bachiller” degree is obtained by the “bachilleres,” it will facilitate them to either continue their academic preparation in institutions of higher education or their inclusion into the labor market if they wish.

Teacher education and the teaching profession

In the current educational context of Ecuador, the minimum qualification for teaching in the National Educational System (SNE) is a tertiary education degree at bachelor level to the primacy of subject knowledge, which is obtained after four years. At present, those intending to obtain a position as a tenured teacher within the National Educational System (SNE), must be part of a public merits and opposition competition. However, once the Ministry of Education calls for the competition which is called “Quiero Ser Maestro,” a previous process is development to provide the candidates the condition as suitable applicant “candidato apto”.

In the process of obtaining the condition of suitable applicants, teaching candidates must undergo two tests, a first of a psychometric nature that catalogs their suitability if qualified. As appropriates, candidates must take a second knowledge test, in which they must obtain at least 70% to fulfill the requirements that will allow them to be involved in the merits and opposition competition.

The merit and opposition contest has two (2) phases: i) the opposition phase, in which the scores obtained in the standardized test of specific knowledge and practical evaluation. The results of the opposition correspond to sixty-five percent (65%) of the final grade of the contest, and the Merit results, where degrees, teaching experience and training courses of the applicants will be graded with to thirty-five percent (35%) of the final grade. Additionally, up to ten percent 10% may be assigned to the applicants for reasons of residence, disability, being a returned migrant, belong to specific ethnic

groups (Montubio, Indígena, Afroecuatoriano), having been recognized as hero, and others that could be established by the National Educational Authorities; ii) the merit contest would allow candidates to move on to a second phase where degrees, teaching experience and training courses of the applicants will be graded with 35%, applicants will also undergo a practical evaluation which is based on a demonstrative lesson, with a value of 25%, to which 40% of the knowledge tests are added.

According to the Ministry of Education (MOE, 2023), the number of teachers continues a downward trend from 223.332 in the scholar year 2009-2010 to 208.876 teachers in the scholar year 2022-2023. However, it is worth noting the feminization of the profession where the percentage of women in the occupation was 72% in 2023. According to Vázquez-Vega (2010), feminization shows modifications in the different professions where the incorporation of women is palpable. That is to say that “Women now succeed in a wide range of activities, for example, educational examinations and assessments” (Broadbent & Kirkham, 2008, p.465). Undoubtedly, Equality policies have been successful in the processes of female incorporation into the labor market, but they have not served to alter the unequal distribution of workload between men and women (Broadbent & Kirkham, 2008). Indeed, it is necessary to implement actions focused on sustainable social development that include women from the earliest stages at educational levels so that they can consequently be inserted in a real, fair, and safe manner in the labor market as well as in public spaces (Gil, 2016).

Literature features scarce of empirical studies (for example, Brown and Remesal, 2017) on the assessment in secondary education Third Year of Bachillerato in Ecuador, so the presented study fills the gap and serves as an inspiration for further exploration of this research area.

2.3.2. Participants

Teachers and students attending the third year of Bachillerato and sub-directors from 38 secondary public institutions make up the sample of this study in Ecuador. These participants were chosen as they are the ones who are directly related to the assessment process in the study context. They have the knowledge on the issue under study and through their individual experience it is possible to get to know how assessment works. On the one hand, teachers from third year of bachillerato and sub-directors provide information about the ways in which the process occurs especially how assessment is structured, the methods that are chosen and why, the frequency of the assessment process, etc. On the other hand, the students provide information about the positive and negative aspects of the assessment process, their perceptions about what can be improved and their approaches to the assessment process. A brief characterization of the participants in the different sub-studies and phases of data collection is presented.

Sub-study 1: Ecuadorian teachers' conceptions about assessment and assessment practices in secondary education.

The demographic characterization of the participants in sub-study 1 is presented (cf. Table 2), which consisted of collecting data from secondary teachers from the third year of “bachillerato” at 38 secondary public institutions from Ecuador. The participants are mainly female (N=130). Respondents are aged between 30 and 45 years old (52.8%). The participants are mainly in professional category “G” (72.9%), holding a qualification of Bachelor in education (44.1%), and pedagogical training (87.3%). Regarding their experience as academics, almost half of them have between 6 – 14 years of experience (49.3,8%)

Table 2

Demographic Characteristics of the Participants in Sub-study 1

	N	%
Gender		
Male	90	43.2
Female	130	56.8
Age		
Less than 30	8	3.5
30-35	40	17.5
36-40	39	17.0
41-45	42	18.3
46-50	44	19.2
51-60	51	22.3
Over 60	5	2.2
Highest academic degree		
High school	1	0.4
Bachelor in other fields	60	26.2
Bachelor in education	101	44.1
Speciality in education	3	1.3
Master in education	60	26.2
Ph.D.	4	1.7

Teaching experience		
1-5	38	16.6
6-14	113	49.3
15-25	54	23.6
More than 25	24	10.5
Professional category		
I	1	0.4
H	1	0.4
G	167	72.9
F	25	10.9
E	11	4.8
D	3	1.3
C	16	7.0
B	2	0.9
A	3	1.3
Pedagogical training		
Yes	200	87.3
No	29	12.7
Total	229	100

(Source: Author)

Sub-study 2: Assessment in Secondary Education: the views of directors and sub directors from Ecuadorian public schools

This sub-study presents data collected from directors and sub-directors in secondary public schools. Most of the directors and sub-directors are female (60.9%). Most participants are ranged between 41-50 years old. In Ecuador, mostly the directors and sub-directors hold a Master degree (60.9%). In Ecuador, 60.9% of the directors and sub-directors revealed that they had between 10 and 20 years of experience as teachers. Meanwhile, the teachers attested to having category “G” (52.2%); category “E” (8.7%); category “F” (26. 1%); and category “C” (13.0%). The majority of the Ecuadorian directors and sub-directors expressed to belonging to the curricular area of Social Sciences (30.4%). In total, 23 directors and sub-directors participated in this sub-study (cf. Table 3).

Table 3

Demographic Characteristics of the Participants in Sub-study 2

	N	%
Gender		
Male	9	39.1
Female	14	60.9
Age		
30-40	7	30.4
41-50	9	39.2
Over 50	7	30.4
Qualifications		
Bachelor	9	39.1
Masters	14	60.9
Teaching experience		
Less than 10	3	13.0
10-20	14	60.9
21-30	4	17.4
More than 30	2	8.7
Professional category		
G	12	52.2
F	6	26.1
E	2	8.7
C	3	13.0
Curricular area		
Cultural and Artistic Education	2	8.7
Interdisciplinary	3	13
Mathematics	2	8.7
Natural Sciences	5	21.7
Physical Education	2	8.7
Social Sciences	7	30.4

Other	2	4.3
Total	23	100

(Source: Author)

Sub-study 3: Students´ Conceptions of Assessment: a study in secondary education of Ecuador and Sub-study 4: Ideas and perceptions of assessment in public secondary schools of Ecuador: students´ views

To understand and to get to know the conceptions about assessment of Ecuadorian students attending the third year of bachillerato in secondary public education, an online questionnaire was conducted. To understand and to get to know the perceptions and beliefs about assessment of Ecuadorian students attending the third year of bachillerato in secondary public education, an online questionnaire based on the studies by Pereira and Flores (2012) and Flores et al. (2015) was conducted. In both studies, most of the participants are female (51.6%). Between the age range of 15 and 17 years old are (73.8%). In addition, 21.9% of students ranged between 18 and 20 years old, and 4.3% are over 20 years old. In total, 996 students participated in this sub- study (cf. Table 4).

Table 4

Biographical data of the participants in sub-studies 3 and 4

	N	%
Gender		
Male	482	48.4
Female	514	51.6
Age		
15-17	735	73.8
18-20	218	21.9
Over 20	43	4.3
Total	996	100

(Source: Author)

Sub-study 5: Experiences of assessment during the Covid-19 pandemic: teachers' views

In sub-study 5, data was collected through two different online questionnaires designed for teachers of 3rd year of bachillerato from secondary education through an online questionnaire with the aim to get to know their perceptions and experiences of assessment and feedback during lockdown due to the COVID-19 pandemic.

The survey applied to 229 teachers contained closed and open questions regarding: i) conditions for the operationalization of the online teaching, where were included items which have incidence on the resources for the teaching and the faced difficulties as well as aspects linked to the personal experience about how the online teaching was developed; ii) pedagogical and assessment online approaches that integrated a set of questions about the decisions made in the teaching and assessment process. Most teachers were female (56.8%) (cf. Table 5). Respondents were aged between 30 and 45 years old (52.8%). The participants are mainly in professional category "G" (72.9%), holding a qualification of Bachelor in education (44.1%), and pedagogical training (87.3%). Regarding their experience as academics, almost half of them have between 6 – 14 years of experience (49.3,8%).

Table 5

Demographic characteristics of the participants in sub-study 5

	N	%
Gender		
Male	90	43.2
Female	130	56.8
Age		
Less than 30	8	3.5
30-35	40	17.5
36-40	39	17.0
41-45	42	18.3
46-50	44	19.2
51-60	51	22.3
Over 60	5	2.2
Highest academic degree		
High school	1	0.4

Bachelor in other fields	60	26.2
Bachelor in education	101	44.1
Speciality in education	3	1.3
Master in education	60	26.2
Ph. D.	4	1.7
Teaching experience		
1-5	38	16.6
6-14	113	49.3
15-25	54	23.6
More than 25	24	10.5
Professional category		
I	1	0.4
H	1	0.4
G	167	72.9
F	25	10.9
E	11	4.8
D	3	1.3
C	16	7.0
B	2	0.9
A	3	1.3
Pedagogical training		
Yes	200	87.3
No	29	12.7
Total	229	100

(Source: Author)

Sub-study 6: Experiences of assessment and feedback during the Covid-19 pandemic: students' views

In sub-study 6, an online questionnaire was applied to the students attending the third year of bachillerato of thirty-eight Secondary Education institutions in Ecuador, with the aim to get to know students' perceptions regarding assessment and feedback during lockdown due to the COVID-19

pandemic. In total, 996 students participated, of which 514 were female. Most students were between 15 and 17 years old. The sample was the same as in sub-study 3 and 4 (cf. Table 6).

Table 6

Demographic Characteristics of the Participants in Sub-study 6

	N	%
Gender		
Male	482	48.4
Female	514	51.6
Age		
15-17	735	73.8
18-20	218	21.9
Over 20	43	4.3
Total	996	100

(Source: Author)

2.4. Methods and Data Collection Procedures

The methods of data collection implemented at different stages of the present research were document analysis, questionnaires, and interviews in order to obtain qualitative and quantitative diversified data to respond to proposed objectives. In this section a description of the methods and procedures used in the data collection are presented.

To conduct research, it is primarily necessary to identify an issue in need of a solution. Once a researchable problem has been identified, the literature relevant to this problem should be reviewed. A literature review will expose the current state of knowledge about the chosen topic (Christensen, Johnson & Turner, 2015). The literature review in the study of a research accomplishes a variety of purposes: "It shares with the reader the results of other studies that are closely related to the study being reported" (Creswell, 2003, p. 29). It relates a study to the larger continuous dialogue in the theory about a specific topic, filling the gaps and extending previous studies (Cooper, 1984; Marshall & Rossman, 1999; Creswell, 2003). Also, "it provides a framework for establishing the importance of the study as well as a benchmark for comparing the results of a study with other findings" (Creswell, 2003, p. 30).

The main objective of the literature review is “to place the study in the context and, with that, to establish a link between the existing knowledge on the subject and the problem to be investigated. A good literature review enhances research credibility by relating and connecting previous research with the problem under investigation” (Coutinho, 2011, p. 55). Moreover, in words of Coutinho (2011, pp. 55-56), the review has other functions such as:

1. Helping focus and refine the problem by informing the reader of what has been done so far and what is known about the research topic;
2. Deepening knowledge of the problem and develop its meaning;
3. Analyzing the research methods used by other researchers to investigate the topic;
4. Identifying possible contradictory results in the previous research;
5. Providing the theoretical basis for the formulation of research hypotheses;
6. Suggesting ideas and methodological procedures to plan empirical research;
7. Providing the researcher with recent and current information about the problem being investigated.

To sum up, the literature review accomplishes many purposes: presenting the results of other studies related with the issue under study; linking the study with the recent state of art; offering a framework for founding the significance of the study; and providing an outline to compare the findings from the implemented research (Creswell, 2009). It also contributes to realize in a deeper way the methods and procedures keeping the investigator informed about the study. Taking in account these assumptions, the review of contextualized national and international published literature is assumed as an essential stage through the several research steps, determining the research study and allowing significant and inclusive analysis of the research results (Fernandes, 2020).

2.4.1. Methods of Data Collection

In the process of empirical research, the researcher is in charge of collecting and analyzing data as well reporting and interpreting the results. The method of data collection is the denomination of the process that refers about how the researcher gets the empirical data that is used to provide answer to research questions (Christensen, Johnson & Turner, 2015).

Document analysis

In the field of Social and Human Sciences the implementation of Document analysis is a technique that acquires great relevance. It enables the identification of appropriate information, details, and evidence

in documents, having as premise the guiding questions of the research study. Furthermore, this method facilitates the collection and authentication of data and, moreover, can create novel empirical information (Coutinho, 2013). The aim is the collection of information that permits to realize and to have a better understanding of a specific phenomenon. In fact, “the researcher is considered to be an active element of the research process, and the act of research has a creative component” (Suddaby, 2006, p. 638). In this sense, document analysis provides the researcher a guide to produce a series of inferences that represent a relevant contribution to the investigative process (Coutinho, 2013). In an effort to implement the method of collecting data as accurate and valid as possible for this research, the researcher, first, analyzed the documents related to assessment process in the educational system of Ecuador (e.g. Regulation of Assessment). Second, it was necessary to analyze the protocol and regulations to perform research with participants from secondary schools in Ecuador. Flick (2009, p. 262) points out that “documents can be instructive for understanding social realities in institutional contexts”.

Questionnaires

According to Holmes (2023, p.1), questionnaires are widely used in educational research. The questionnaire is a technique to collect data through a set of questions, to acquire information (opinions, beliefs, behavioral attitudes, etc.) (Ghiglione & Matalon, 1997; Quivy & Campenhoudt, 1998; Potvin, Fortin & Rousseau, 2009). It makes possible the interrogation of a certain number of individuals considering a generalization (Ghiglione & Matalon, 1997), and it could be implemented to a universe (Leedy & Ormrod, 2010; Langdridge & Johnson, 2009). Additionally, the use of this instrument is characterized by its economic, and temporal advantages and adaptability in the implementation and statistics management of data from considerable sample sizes (Ghiglione & Matalon, 1997). The questionnaire gives a quantitative or numeric “portrait” of tendencies, postures, or views of a population in study (Creswell, 2009; Johnson & Christensen, 2012). These key features assert that “the humble questionnaire is the most common research tool” (Fife-Schaw, 2020, p. 344). Table 7 shows the strengths and weaknesses of the questionnaires.

Table 7

Strengths and Weaknesses of Questionnaires

STRENGTHS	WEAKNESSES
▪ Good for measuring attitudes and eliciting other content from research participants;	▪ Usually must be kept short;
▪ Inexpensive (especially mail questionnaires, Internet, and group-administered questionnaires);	▪ Reactive effects might occur (e.g., respondents might try to show only what is socially desirable);
▪ Can provide information about participants' subjective perspectives and ways of thinking;	▪ Nonresponse to selective items,
▪ Can administer to probability samples;	▪ People filling out questionnaires might not recall important information and might lack self-awareness;
▪ Quick turnaround for group-administered questionnaires;	▪ Response rate may be low for mail and e-mail questionnaires;
▪ Perceived anonymity by respondent can be high if situation is carefully controlled;	▪ Open-ended items may reflect differences in verbal ability, obscuring the issues of interest;
▪ Moderately high measurement validity (i.e., high reliability and validity) for well-constructed and validated questionnaires;	▪ Data analysis can be time consuming for open-ended items;
▪ Closed-ended items can provide exact information needed by researcher;	▪ Measures need validation.
▪ Open-ended items can provide detailed information in respondents' own words;	
▪ Ease of data analysis for closed-ended items;	
▪ Useful for exploration as well as hypothesis testing research.	

(Adapted from Christensen, Johnson, and Turner, 2015, p. 72)

In this research, two different online questionnaires were administered in 2020 to teachers and students from secondary schools of Ecuador. More precisely, 229 teachers participated in one survey designed for the teachers and 996 students answered the questionnaire designed for them. Both online questionnaires were applied between November 2020 and December 2020. At the beginning of this

research, 39 institutions were selected and identified. However, data were collected in 38 Ecuadorian Public Schools during the lockdown due to COVID-19.

Both of questionnaires were selected as it was expected to obtain responses from a lot of students and teachers regarding assessment in Secondary Education. The state of the art about quantitative research emphasizes that the elaboration of a questionnaire should follow several stages (Sapsford, 1999). Leedy and Ormrod (2010) refer some procedures to develop a questionnaire in a correct way: the extension of the questionnaire should be short; should be easy when participants read it; it must contain clear instructions, an appropriate and clear language should be used in a questionnaire; should be coherent and their validity should be proved.

A review of the literature was carried out and previous validated questionnaires scales were adopted. The questionnaire for the teachers was prepared based on the studies by Brown (2006); Gonçalves (2011, 2016); Pereira (2011, 2016); Flores, Machado and Alves (2020) and Flores, Veiga Simão, et al. (2020). Similarly, the survey applied to the students was prepared based on the studies by Brown, (2008); Matos (2010); Pereira (2011, 2016); Flores, et al. (2019); Flores, Machado and Alves (2020); Flores, Veiga Simão, et al. (2020) and were developed with the goals to identify the perceptions and beliefs of the participants concerning some dimensions of assessment such as beliefs on assessment in terms of ideas associated, assessment methods; practices of assessment and feedback during the pandemic.

The questionnaire developed for the teachers included the demographic characteristics (gender, age, academic degree, teacher experience, professional category, among others). It also included two scales: sub- study 1 conceptions of assessment and sub -study 5 practices of assessment and feedback during the online context due to COVID-19. Moreover, four open-ended questions were included in the questionnaire. Two of them were about the difficulties teachers felt and who they asked for help to overcome them during the online assessment, the other two questions were about the pedagogical tools and strategies the teachers recommended /not recommended for the context of online teaching.

The questions in the first scale of the online questionnaire applied to teachers were adapted to the Ecuadorian context from the original Teachers' Conceptions of Assessment inventory" (TCoA) by (Brown 2006), with the goal of determining if the TCoA fits the cultural and policy context of Ecuadorian Secondary Education reality and the extent to which the emerging factors match the original model (sub-study 1). This scale involves 27 items (cf. Appendix IV). Each item of the conceptions of assessment inventory was rated using a five-point Likert scale with a set of options representing

different levels of agreement or disagreement from 1= strongly disagree to 5= strongly agree. This type of scale, founded on the method of summated ratings, evaluates attitudes about an issue (Ary, Jacobs, Sorensen, & Razavieh, 2010) and allows to assess a continuum of agreement of a specific statement delivering a more reliable information about individual's viewpoint (Anderson, 1990; Johnson & Christensen, 2012).

Table 8

Structure of the Questionnaire with Teachers in Sub-study 1

I – DEMOGRAPHIC CHARACTERISTICS			
Age, gender, professional category, highest academic degree, teacher experience, levels where teach and pedagogical training			
II – SCALES			
	Scale identification	Number of items	Authors
1st Scale	Teachers' conceptions of assessment inventory	27	(Brown, 2006, adapted to the Portuguese context by Gonçalves, 2011-2016)

(Source: Author)

The questions in the second part of the questionnaire were used in sub-study 5. They were organized in a way to provide the teachers the option to select a single response. In the first scale participants, had to rate the importance attributed to each assessment method during the online context. It used a four-point Likert scale ranging from 1 = not at all important to 4 = very important. In the second, third, and fourth scale a five-point Likert agreement ranging from 1 = increased a lot to 5= decreased a lot was applied. A five-point Likert scale ranging from 1 = never to 5=always was used in the fifth scale. Finally, four open-ended questions were used (cf. Table 9).

Table 9

Structure of the Questionnaire with Teachers in Sub-study 5

I- DEMOGRAPHIC CHARACTERISTICS		
Age, gender, professional category, highest academic degree, teacher experience, levels of teaching and pedagogical training		
II – SCALES		
	Scale identification	Number of items
1st Scale	The importance of assessment during the online context	3

2nd Scale	Amount of feedback provided by teachers during the online assessment contrary to the face-to-face context	1
3rd Scale	Students' participation in self and peer evaluation during the online assessment contrary to the face-to-face context	1
4th Scale	The diversity of assessment instruments used by teachers during the online assessment contrary to the face-to-face context	1
5th Scale	Assessment instruments used by teachers during the online assessment	8
1st question	Pedagogical tools and strategies recommended by teachers for the online teaching context	-
2nd question	Pedagogical tools and strategies not recommended by teachers for the online teaching context	-
3rd question	Difficulties faced by teachers during the online assessment practice	-
4th question	People teachers turned to in order to overcome the difficulties they faced during the online assessment practice	-

(Source: Author)

The online questionnaire applied to the students included demographic characteristics (age and gender). It also included three scales: sub- study 3 focused on conceptions of assessment, sub- study 4 focused on perceptions about assessment and sub -study 6 focused on practices of assessment and

feedback during the online context due to COVID-19. Moreover, two open-ended questions were included in the questionnaire. The questions were about the feedback the students received during the online context.

The questions used in the first scale (sub-study 3) of the questionnaire applied online to students in the Ecuadorian context were adapted from a Portuguese version of the “Students’ Conceptions of Assessment inventory” (SCoA-VI) by (Brown 2008), that Matos (2010) used in Brazil. Sub-study 3 adopted (28 items) Likert’s five-point balanced agreement rating scale (i.e. strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree) with the goal of determining the students’ conceptions of assessment in the Ecuadorian Secondary Education context and to get to know the extent to which the emerging factors match the “SCoA- VI” ’ previous/original model. Both Brown and Pereira have given their consent to the adaptation of their questionnaires for the purpose of the current research.

Table 10

Structure of the Questionnaire with Students in Sub-study 3

I – DEMOGRAPHIC CHARACTERISTICS			
Gender and age			
II – SCALES			
	Scale identification	Number of items	Authors
1st Scale	Students’ conceptions of assessment “SCoA- VI” inventory	27	(Brown, 2008, adapted to the Portuguese context by Matos, 2010)

(Source: Author)

The group of questions of the questionnaire designed for the students included three scales. In sub-study 4, the first scale was focused on ideas about assessment; statements were presented, and respondents had to identify the extent to which they associated assessment with these ideas, using 1=not at all to 4=very much. In the second scale statements related to perception of fairness, effectiveness, trust and influence of assessment, used a five-point Likert scale with a set of options representing different levels of agreement or disagreement from 1= strongly disagree to 5= strongly agree.

Table 11

Structure of the Questionnaire with Students in Sub-study 4

I – DEMOGRAPHIC CHARACTERISTICS			
Gender and age			
II – SCALES			
	Scale identification	Number of items	Authors
1st Scale	Ideas associated to assessment	13	(Source: Author)
2nd Scale	Perceptions of assessment	21	(Source: Author)
(Source: Author)			

The questions used in sub-study 6 were organized by rating scales that allowed the students to choose a single response. In the first and second scale a five-point Likert was used, ranging from 1= strongly disagree to 5= strongly agree. Finally, two open-ended items were used.

Table 12

Structure of the Questionnaire with Students in Sub-study 6

I – DEMOGRAPHIC CHARACTERISTICS			
Gender and age			
II – SCALES			
	Scale identification	Number of items	Authors
1st Scale	Perspectives of online assessment	12	(Source: Pereira,2016)
2nd Scale	Online Feedback	6	(Source: Author)
II – OPEN – ENDED QUESTIONS			
1st question	Type of feedback received during the online context	-	(Source: Author)
2nd question	Frequency of feedback received	-	(Source: Author)
(Source: Author)			

Procedures to collect data through questionnaires

First, the authorities of the Ministry of Education of Ecuador were contacted to request permission to conduct this research in 39 secondary public schools. After the written authorization was issued by the District of Education, the questionnaires designed in Spanish were applied to the teachers and students of the third of Bachillerato with the help of the directors of the educational institutions selected.

For the collection of data the researcher contacted the directors to request their help for the administration of the questionnaires attaching a written document with an introductory note with the goal of the research, instructions and a direct message to be sent with the link of the survey for the participants. To collect the data from the teachers, the directors shared the message with the link directly through their institutional communication channels. To collect the data from the students, the directors requested the tutors of the students attending Third Year of Bachillerato to send the message with the link of the questionnaire directly to them through the different means of communication (WhatsApp groups, e-mail, etc.) they were using to be in contact with their students due to the wave of COVID-19. The third scale related to methods and modes of assessment where the pupils were surveyed to identify the frequency of the methods using a scale ranging from 1=not at all to 4=frequently used.

The questionnaire was applied online, through Google Forms. After being validated by assessment specialists and for the data collected, confidentiality has been maintained by the researcher by applying an encoding process.

In this research study, a non-probabilistic sample to target a specific group “in the full knowledge that it does not represent the wider population; it simply represents itself” (Cohen, Manion & Morrison, 2007, p. 113) was applied. Within a non-probabilistic approach (Coutinho, 2014), a convenience sample was defined. The convenience sample “involves choosing the nearest individuals to serve as respondents and continuing that process until the required sample size has been obtained” (Cohen, Manion & Morrison, 2007, pp. 113-4). This type of sampling is commonly used in studies with students and teachers (Cohen, Manion & Morrison, 2007). In the convenience sampling, the researcher makes a selection of his/her sample from those to whom he/she has an easy access. This kind of sampling represents only itself and does not look to represent the whole population.

Interviews

The interview as a qualitative method of collecting data is characterized by producing knowledge through the interaction of the interviewer and the interviewee (Kvale, 2007; Given, 2008).

The interviews can be used as a dominant strategy or combined with other data collection methods (Bogdam & Biklen, 1994). The interview is not just about collecting information about various aspects of life, “it is part of life itself, its human embeddedness is inescapable” (Cohen, Manion & Morrison, 2007, p. 349). Through the researcher's questions, the interviewee expresses their perceptions and opinions about a given situation (cf. Table 13). This level of understanding is given not only through the content of the discourse, but also through its intensity and through the non-verbal language, which the researcher must also be aware of (Ghiglione & Matalon, 1997).

Table 13

Strengths and Weaknesses of the Interviews

STRENGTHS	WEAKNESSES
▪ Good for measuring attitudes and most other content of interest;	▪ In- person interviews usually are expensive and time consuming;
▪ Allow probing and posing of follow -up questions by interviewer;	▪ Reactive effects (e.g., interviewees might try to show only what is socially desirable);
▪ Can provide in-depth information;	▪ Investigator effects might occur (e.g., untrained interviewers might distort data because of personal biases and poor interviewing skills);
▪ Can provide information about participants’ subjective and ways of thinking;	▪ Interviewees might recall important information and might lack self-awareness;
▪ Closed- ended interview provide exact information needed by researcher;	▪ Perceived anonymity by respondents might be low;
▪ Telephone and e- mail interviews usually provide very quick turnaround;	▪ Data analysis can be time consuming for open-ended items;
▪ Moderately high measurement validity (i.e., high reliability and validity) for well-constructed and well tested interview protocols;	▪ Measures need validation.
▪ Can use with probability samples;	
▪ Relatively high response rates are often attainable;	
▪ Useful for exploration as well as hypothesis.	

(Adapted from Christensen, Johnson, and Turner, 2015, p. 73)

Intended to complement and to go deeper with the information already collected through other data collection methods from Secondary Education teachers and students, data collection was also carried out from sub-directors as they are those who are in charge of the academic and pedagogical management into the educational institutions in Ecuador. In this sense, it is essential to get to know their perception of the assessment process and practices. In sub-study 2, twenty-three sub-directors were interviewed individually (cf. Table 3). The interviews took place from December 2020 to February 2021. In this sub-study, the use of semi-structured interview allowed to get comparable data between the several respondents while trying, at the same time, a more general identification of their beliefs in the proposed topic (Bogdam & Biklen, 1994; Bryman, 2008)

Procedures to collect data through interviews

A previous contact was made by the researcher with the sub-directors in order to schedule the day, time and place for the interviews. In the day of the interviews, an oral introduction about the goals of the study was provided to the interviewees by the researcher after having had prior access to consent and research protocol. Most of the data collected (21 out of 23) through the interview has been recorded in audio with the consent of the participants, and later transcribed verbatim and coded, maintaining the data confidentiality of the information, namely the data related to the names, institutions, locations, or persons. The native language (Spanish) of the participants was used to carry out the interviews.

2.5. Methods of Data Analysis

The following section presents how the data analysis in this research was implemented. The procedures and methods that were taken for the analysis of the qualitative and quantitative data collected will be explained.

2.5.1. Quantitative Data

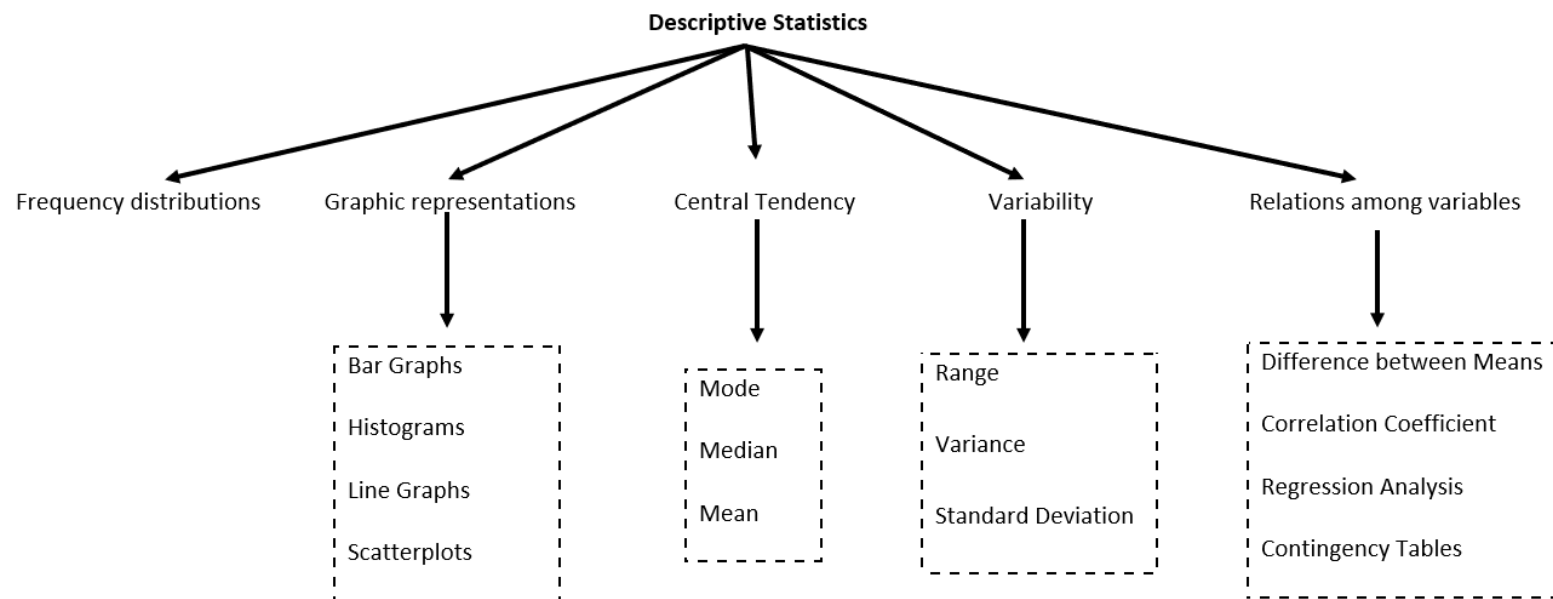
Most of the statistical analysis of the quantitative data of the present research was developed with the use of the Statistical Package for the Social Sciences (SPSS). The SPSS is one of the most widely used software in social sciences (Bryman, 2008; Field, 2009, Babbie, Wagner, & Zaino, 2015; Muijs, 2011). The practice of using quantitative data in social research is valuable, because it works with numbers and has the power to present findings purposes, systematics, and generics (Descombe, 1998) and it “is a powerful form” (Cohen et al., 2008, p. 501) of large-scale research studies. Moreover, confirmatory factor analysis (CFA) using Mplus software version 7 was implemented to

stablish the conceptions of the teachers and students about assessment. According to Muthén (2024, p. 3), “A strength of Mplus is its wide variety of analysis capabilities”.

In the analysis of quantitative data, a descriptive process is adopted. “In descriptive statistics, the goal is to describe or summarize your research data” (Christensen et al., 2015, p. 394). This allows the researcher “to obtain a first reading of the data, capable of giving an insight into the dispersion, shape and structure of the distribution” (Coutinho, 2013, p. 153). In other words, the information collected is used to conduct statistical procedures that include phases of classification, calculation, and summarization of numerical data which was obtained systematically (Hernández-Sampieri et al., 2010). Figure 3 summarizes research data descriptive statistics.

Figure 8:

Summary of Research-Data Descriptive Statistics



(Adapted from Christensen, Johnson, & Turner, 2015, p. 393)

Confirmatory Factor Analysis through Mplus

“Mplus offers researchers a wide choice of models, estimators, and algorithms in a program that has an easy-to-use interface and graphical displays of data and analysis results” (Muthén & Muthén, 2015, p.1). The use of Mplus software convey to apply modern modelling techniques like robust standard errors, allowing the researchers to relax modelling assumptions and Bayesian modelling which allows the estimation of complex models that would not converge in maximum likelihood models (Klopack & Wickrama, 2020). Confirmatory Factor Analysis (CFA) is one of the models that can be estimated using Mplus (Muthén & Muthén, 2015).

Brown et al. (2019, p.8) assert that “Confirmatory Factor Analysis (CFA) is a sophisticated causal-correlational technique to detect and evaluate the quality of a theoretically informed model relative to the data set of responses”. Therefore, “Confirmatory Factor Analysis (CFA) is used to study the relationships between a set of observed variables and a set of continuous latent variables” (Muthén & Muthén, 2015, p.55).

According to Rojas-Torres (2020, p.387), “The first time the statistical technique of Confirmatory Factor Analysis was presented in the scientific literature, was in the article entitled *A general approach to confirmatory maximum likelihood factor analysis* by Karl Gustav Jöreskog (1969)”. The implementation of “CFA includes the following criteria: chi-square statistic (χ^2), degree of freedom (df) and ratio of chi-square to degrees of freedom (χ^2/df)” (Hidri, 2016, p.26). However, multiple fit indices would be tested (Hooper, Coughlan, & Mullen, 2008).

The elements that allow the researcher to get to know if the proposed Confirmatory Factor Analysis model fit with the data are called Fit Indices. For this research, they were considered to balance chi-square sensitivity (Hidri, 2016). Moreover, the decision about whether a statistical model perfectly indicates the attributes of the data involves inspection of numerous fit indices (Hu and Bentler, 1999; Fan and Sivo, 2005). In addition, “Some of the most commonly used fit indices the Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), the Tucker-Lewis index (TLI), and the Standardized Root Mean Square Residual (SRMR)” (Garrido et al., 2016, p.10).

The Comparative Fit Index (CFI) is one of the relative indices most used and with the best performance (Tanaka, 1993). According to Hidri “while values of CFI and TLI should be 0.95 as good fit and 0.90 as acceptable fit” (2016, p.27), a minimum value of .9 is required to defend a model (Bentler & Bonnet, 1980). RMSEA (Root Mean Square Error of Approximation) y SRMR (Standardized Root Mean-Square): are measures of the amount of error of the model, the indicators of a good fit are considered those with values less than .05 (Browne & Cudeck, 1993). The criterion proposed by Hu

and Bentler (1999): $TLI \geq .95$, $CFI \geq .95$, $RMSEA \leq .05$ e $SRMR \leq .08$. was used for a long time. However, it has been shown that Hu and Bentler's criterion is very restrictive when implemented to multi-factor rating instruments (Marsh et al., 2004, 2005). In this sense, it is important to highlight that "there is still a lot of debate about the most appropriate measures for model fit" (Matos et al., 2013).

According to Schreiber (2022) you should use the Akaike Information Criterion (AIC) or the Bayesian Information Criterion (BIC) to compare models. Respectively proposed by Akaike (1974) and Schwarz (1978), both criteria result frequently used for the selection of models (Amaya, 2018). The lowest values from AIC and BIC among the models indicate the best fit (Van de Schoot et al., 2012; Schreiber, 2022). "There is no rule of thumb, the values depend on actual dataset and the model, simply chooses the lowest IC value" (Van de Schoot et al., 2012, p.488).

2.5.2. Qualitative Data

Firstly, it is important to highlight some characteristics of qualitative research (Bogdan & Biklen, 1994). According to Flick (2009) more and more people (researchers, students, ...) are dedicating to the practice of qualitative research regardless of whether their research interests are formal or informal. Qualitative research is essential due to its capacity to infer meanings and produce or contribute theories (Strauss, 1987). Through the analysis of qualitative data researchers can get "rich descriptions and explanations of human processes with strong potential for revealing complexity" (Miles et al., 2014, p. 4) and it is centered on understanding and thinking (Pereira, 2016). Moreover, qualitative research is a strategy that regularly emphasizes words rather than focuses on collecting and analyzing of numerical data. As a research strategy it is identified as inductive, constructivist, and interpretivist (Bryman, 2008), "because qualitative inquiry depends, at every stage, on the skills training, insights, and capabilities of the inquirer, qualitative analysis ultimately depends on the analytical intellect and style of the analyst" (Patton, 1990, p.433).

In this sense, the selected method to analyze the qualitative data from this research was content analysis. In the words of Esteves (2006, p. 107), content analysis is the "generic expression used to designate a set of possible techniques for processing previously collected information". Firstly, it was linked with the quantitative viewpoint of Berelson (1952) where it was used as a technique of investigation for the impartial, efficient and quantitative characterization of the communication content, and then, in the 70s with the works of Holsti (1969) it takes a role into the qualitative perspective as a "technique for making inferences by systematic and objective identification of the specific characteristics of a message" (Esteves, 2006, p. 108). At present, content analysis is considered as a privileged technique for analyzing qualitative information and to define and understand the content of a

document, helping to reinterpret messages and accomplish an understanding of their significances at a level that goes beyond common interpretation. In its development, content analysis has oscillated between the rigor of the numbers supposed objectivity and the 'fertility' of subjectivity, in an expanding valuation of qualitative approaches logic (Esteves, 2006).

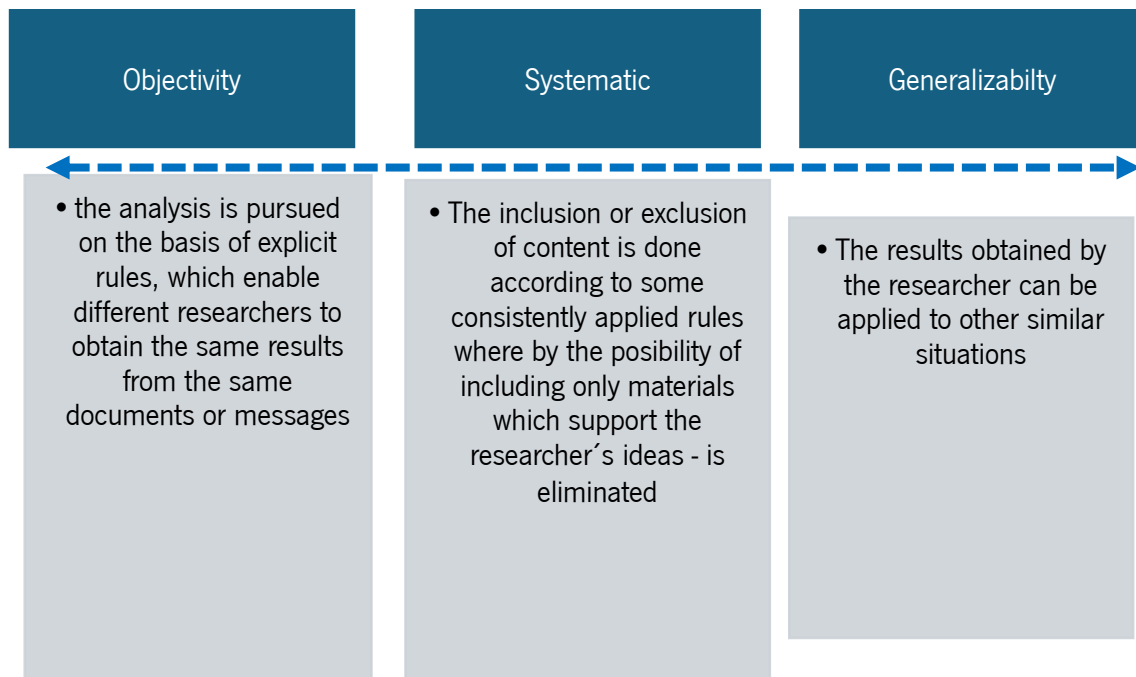
Content analysis is defined as the scientific scrutiny of documented information. It is the examination of the content respecting to the significances, conditions and purposes confined in a group of messages. Some definitions of content analysis are offered as noticed it is a technique of inquiry for the purpose, methodical, and quantitative explanation of the demonstrated content of communication (Berelson, 1952; Kerlinger, 1986), it is any process used for the creation of inferences by methodically and accurately classifying detailed characteristics of messages (Holsti, 1968), an inquiry technique for the construction of replicable and effective inferences from dataset to their context (Krippendorff, 1980), that operates with a group of procedures to generate accurate readings from the content (Weber, 1990) or according to Stone (1966), content analysis refers to any activity to evaluate the relative degree to which explicit sources, beliefs, or topics saturate an assumed message or data (Prasad, 2008).

The implementation of a process of analysis and codification to reinterpret messages and in an encounter between a prior framework of reference and the empirical material collected (Esteves, 2006; Guerra, 2010). The decision to use content analysis technique is based in that it is "a set of communication analysis techniques that uses systematic and objective procedures to describe the content of messages" (Bardin, 2009, p. 40). Thus, content analysis lets the researchers "to make inferences by systematic identification and objective of the specific characteristics of a message" (Esteves, 2006, p. 108). Bardin (2009) advises to the fragile nature of the content analysis, recommending that the common category analysis founded on the repetition of the occurrence of the themes of all interviews need to be overcome. On the other hand, the theorist advocates for the consideration of sharing all the data richness "the essence of the meanings produced by the people, letting out the latent, the original, the structural, the contextual" (Bardin, 2009, p. 91).

A cautious evaluation of the descriptions of the method demonstrate attention based on characteristics like structure, impartiality, mensuration, context, and legitimacy - with reference to the interpretations drawn from the communication content about the source, the message, or the recipient of the information (Prasad, 2008). Therefore, content analysis is for making valid, replicable, and unbiased inferences about the message supported by clear rules. Moreover, Prasad (2008) argues that content analysis operates through three basic principles (cf. Figure 9):

Figure 9:

Basic Principles of Content Analysis



(Adapted from Prasad, 2008, p.3)

2.6. Data Triangulation

Denzin (1970, 1978) coined the term triangulation, which is a research strategy that allows us to confirm our observations by drawing upon several sources or perspectives within the same research. The author claimed there were four distinct ways this triangulation could occur: *Theoretical triangulation*, *Investigator triangulation*, *Methodological triangulation*, and *Data analysis triangulation*. In this research, triangulation types presented in the literature was implemented taking in account the suggestions of Flick (2007), triangulation was adopted to get innovation of conceptual frameworks. *Theoretical triangulation* involves using different theories throughout the design, collection, and analysis process. Proceeding in this way would involve the researcher in the study of a phenomenon through multiple lens. *Investigator triangulation* refers to the contributions researchers do in the study to improve both the credibility of the observations and the resulting interpretation of the research. *Methodological triangulation* occurs where the application of several methods is used to study a specific phenomenon with the aim to overcome the weaknesses and biases that may arise from using only one method approach. Undoubtedly research decisions, which praise the benefit of combining qualitative and quantitative approaches, represents this approach. Finally, *Data analysis triangulation* refers to the

practice of using some different methods of analyzing and interpreting data in order to enhance the validity of the findings by guaranteeing the robustness of one's results (Denzin 1970, 1978). A continuous triangulation of techniques and inferences involving researcher, and respondents was established (Lessard-Hébert, Goyette, & Boutin, 2005). The correct statistical management of the data were guaranteed (Cohen, Manion, & Morrison, 2000).

2.7. Reliability and validity of the research

The application of a research study in the field of education requires rigor as an essential aspect. In this sense, “Reliability and validity of instrumentation should be important considerations for researchers in their investigations” (Bajpai, & Bajpai, 2014, p.115). Moreover, the instrument used in the research study to measure must present both reliability and validity (Sürücü, & Maslakci, 2020). Thus, reliability and validity are very important criteria to measure social research (Bryman, 2008., Drost, 2011). Reliability refers to the stability of the measuring device used, and its consistency assigning similar scores across time. (Bajpai, & Bajpai, 2014., Christensen, Johnson, & Turner, 2015., Sürücü, & Maslakci, 2020). As is claimed by (Drost, 2011, p. 106), “reliability is the extent to which measurements are repeatable – when different persons perform the measurements, on different occasions, under different conditions, with supposedly alternative instruments which measure the same thing”. The following are the four types of reliability proposed by Christensen et al. (2015): *Test-retest reliability* refers to the consistency of the results obtained when the measuring tool is applied to the same sample group over time; *Equivalent-forms reliability* refers consistency of a group of respondents' scores on two versions of the similar instrument; *Internal consistency reliability* is an indicate of the consistency with which items on a test measure a single construct; and , *Inter-rater reliability* involves rating of observations using a specific evaluation applied by different judges where a degree of consistency or agreement is expressed between two or more scores, judges, observers, or ratters.

Alternative expressions for reliability include dependability, stability, consistency (Kerlinger, 1986). Therefore, reliability is a “synonym for consistency and replicability over time, over the instrument and over groups of respondents” (Cohen, Manion & Morrison, 2007, p. 146) and is linked to accuracy and precision (Cohen, Manion & Morrison, 2007).

To ensure that the findings found as a result of the analyses are valid requires a validated measuring instrument (Sürücü, & Maslakci, 2020). In this sense, validity concerns to the “extent to which what measure reflects what we expect to measure” (Anderson, 1998, p. 13). “In order for the research to yield beneficial results, the measuring instrument must measure what it claims” (Sürücü, & Maslakci, 2020, p.2697). It refers to the “truthfulness”, “correctness” or “accuracy of research data”

(Burton & Bartlett, 2005, p. 27). It is a fundamental aspect to efficient research study (Cohen, Manion & Morrison, 2007).

According to Christensen et al. (2015, p.179), “The best way to ensure that a quantitative research study yields empirical findings from which accurate inferences can be made is to try to ensure that the study has the four types of validity”. Shadish, Cook, & Campbell, (2002) distinguished the four types of validity as follows: statistical conclusion validity, construct validity, internal validity, and external validity.

In qualitative research alternative terms would be used to compare the concepts of Reliability and Validity (Noble & Smith, 2015). In this sense, Lincoln & Guba (1985) present alternative criteria such as truth value, consistency and neutrality and applicability to demonstrate rigor in the practice of qualitative research. According to Noble & Smith (2015, p. 34) “qualitative researchers aim to design and incorporate methodological strategies to ensure the ‘trustworthiness’ of the findings”. The following are a list of validity strategies proposed by Christensen et al. (2015) that can be used in qualitative research: data triangulation; external audit; investigator triangulation; low-inference descriptors; methods triangulation; negative-case sampling; participant feedback; pattern matching; peer review; reflexivity; researcher-as-detective; rule out alternative explanations; theory triangulation; triangulation. Additionally, “It is the researcher's creativity, sensitivity, flexibility and skill in using the verification strategies that determines the reliability and validity of the evolving study” (Morse et al., 2002, p. 17).

2.8. Ethical considerations

The branch of philosophy called Ethics is concerned with morality (Price et al., 2015). In this sense, Ethics refers to the attempt to formulate codes and principles of moral guidance (May, 2001).

The practice of research in social and behavioral sciences by researchers aims to achieve useful knowledge and an understanding of human behavior (Social Research Association, 2003). As social and behavioral sciences can be identified as channels to a more suitable world if the produced knowledge is informed by ethical and conscientious research (RRBM, 2017, revised 2020). In other words, “Ethics helps researchers to carry out their research honorably, honestly, objectively, and responsibly toward the overarching goal of enhancing our understanding of human behavior in social context” (Ferrero & Pinto, 2023, p.43), and, in this way, ethics should be considered during the whole research process (Cohen et al., 2008; Coutinho, 2011; Hammersley & Traianou, 2012).

In this research the implementation of ethics was a concern, especially at the moment to choose the procedures and options that could be taken for its development. Moreover, the role of the researcher and the participants was considered. Regarding the role of the researcher in the

management of the research process, the literature reports special concerns about the established relationship the researcher and the participants could have, due to participants' rights and the risks and benefits that the research process itself involves for the respondents' stakeholders (Flores, 2003). In this sense, a social researcher needs ethical approval to conduct research when human participants are involved (Madushani, 2016), because, as is established in the Code of Conduct of the University of Minho, chapter five, about Ethical Conduct in Scientific Research, it is clearly highlighted that:

Ethics in scientific research always implies the respect for the dignity of the human person, for animal welfare, for the progress and enhancement of knowledge, for scientific integrity, for the quality and originality of research and for freedom of research. It thus implies a commitment to a research practice subordinate to universal ethical values and principles, as well as those derived from a commitment to building science as a "collective heritage" (p.31)

According to Ferreira and Serpa (2018), ethics should not be seen as a problem, instead of that, it should be considered as an active process aimed to provide guidelines and support in the responsible development of professional judgment and, thus, enhance the quality of research. Moreover, as a researcher, you must be aware that "while people may make up guidelines for ethical decision making, the tough ethical decisions ultimately reside with you, with your values, and with your judgments of right and wrong" (Bogdan & Bliken, 1998, p. 46). Conducting ethical research also requires the incorporation of a set of moral values (Oates et al., 2021).

As mentioned by Ferrero & Pinto (2023), ethics guarantees that research reaches the aims and requirements of sponsored institutions, respecting both the recognized interests of those organizations and the general interests of the society. In order to engage in an ethical research process several procedures have been implemented as a guideline for the researcher and to protect the human participants. For instance; "One of the most significant steps to ensuring a project will proceed ethically is consulting an ethics board, applying for review, receiving their recommendations, and obtaining their approval (or favorable opinion) to conduct the project" (Murdock & Erickson, 2023, p. 289). In this regard, approval from the Ethics Committee of Research for Social and Human Sciences from the University of Minho was obtained (Ref. CEICSH 046/2021) (cf. Appendix I). Another step refers to ethics in practice regards the ethical issues that occur in the development of the research study, those real concerns that appear in the context where the research is implemented (Guillemin & Gillam, 2004; Roriz & Padez, 2017; Ferreira & Serpa, 2018). Ethics in research is an essential aspect in the control of the scientific practice procedure (Ferreira & Serpa, 2018). Research ethically implemented is not

impartial research, and ethics is performed through each of the phases of scientific research, independent of whatever its audience (Rodríguez Gómez, Gil Flores & García Jiménez, 1999; Tuckman, 2000; Lima, 2006; Miller, 2012).

2.8.1. Access to the context of the research

Before to access to the field where a researcher pretends to start a scientific study, it is imperative to get official permission from the corresponding authorities, and at the same to be sure that the research process and methods proposed to undertake the research are appropriate. Furthermore, the way how confidentiality will be practiced in the management, analysis and dissemination of the findings should be “negotiated with relative openness, sensitivity, honesty, accuracy and scientific impartiality” (Cohen, Manion & Morrison, 2007, p. 58).

In this context, and as this research was conducted in thirty-eight Ecuadorian public schools during the wave of COVID -19, permission was requested and obtained from the corresponding District of Education to carry out the study (see Appendix II). The researcher made contact (in person, via phone calls, email) with each school director in order to share the permission for the study issued by the District of Education, and additionally to ask them through a written request (see Appendix III) to collaborate with the study in the way of sharing the invitations and the links for the selected respondents through the different means of communication(institutional and personal e mails, class ´ WhatsApp groups , personal WhatsApp) they were using due to the Pandemic times. Ethical considerations such as the informed consent and confidentiality were respected.

2.8.2. Informed consent

“The dignity of the person precludes any form of coercion obliging an individual or individuals to participate in a research project” (Ferrero & Pinto, 2023, p. 36). Moreover, “Following established informed consent protocols are indispensable in any scientific research and serve to ensure that research is carried out in a manner that conforms to international [and national] regulations (. . .)” (Bos, 2020, p. 246). Informed consent is a document where the researcher provides information to the research participant about all the aspects of the study that might influence the participant´s willingness to volunteer to participate (Christensen et al., 2015). The implementation of informed consent in scientific research, in several circumstances, is a "fundamental principle for the ethical acceptability of a study" (Lima, 2006, p. 142). In this sense, the process of use an informed consent involves the use of a written document that when signed by both parties is valued, as it represents evidence of the conscious role of the human participant and that of the researcher, with the distribution of a copy to

the participant upon signature by both parties (Bogdan & Biklen, 1999; Lima, 2006; Ferreira & Serpa, 2018). Nonetheless, according to Bos (2020, p. 248). “Lately, they are often digital (i.e. in an online questionnaire, the respondent is informed about the objective of the questionnaire and needs to agree by ticking a box before proceeding). In addition, “Once a person is provided with all available information, it is assumed that he or she can make a free decision as to whether to participate, and in this manner, participants can avoid experimental procedures they consider objectionable” (Christensen et al., 2015, p. 125). Also, “Consent requires that a participant not only has a substantial understanding of the situation in which they will partake but is also at liberty to refuse” (Bos, 2020, p. 247). In the context of this research study, the informed consent was a concern in all phases of research and in each sub-study implemented (see Appendix III).

2.8.3. Confidentiality

Confidentiality involves not revelation of the personal information of research participants as well as their identities and guarantee the protection of sensitive information. “Although researchers know who has provided the information or are able to identify participants from the information given, they will in no way make the connection known publicly: the boundaries surrounding the shared secret will be protected” (Cohen et al., 2007, p. 65). Moreover, confidentiality “involves a clear understanding between the researcher and participant concerning how the data will be used” (Anderson, 1998, p.20). In this sense, the researcher informed the participants that the confidentiality of the data was guaranteed, and that the data obtained were exclusively used for research purposes. In the case of interviews, in order to ensure data confidentiality, permission was requested for audio recording and to transcribe excerpts in the research reports.

2.8.4. Role of the researcher

During the research process the researcher assumes an important role. The role of the researcher must be aligned with ethical requirements. The requirements are determined by the profile of the person who carry out the research and his/her proximity to the human participants involved in the study (Flores, 2003).

The role of the researcher during the research phases pursued different approaches in the collection, analysis, and interpretation of data. It was dual. This research study was composed of quantitative and qualitative methods. For instance; during quantitative research, the researcher played a neutral role in the research process. The meaning that respondents assign to the research problem

studied is widely ignored in studies of this nature (Patton, 2002) focused solely on outcomes, seeking generalization, estimation, and cause-effect connections through deductive reasoning.

Consecutively, in the phase of qualitative research, which is associated with inductive reasoning, the researcher was aware of the process, context, interpretation, meaning or understanding. The goal was to describe and understand the phenomena studied by reaching and reporting the participants' practices or histories in their own words through interviews. What is highlighted is the scrutiny of the world that shapes people's social actions or interactions, and the meaning people attach to their experiences (Yilmaz, 2013). Open-ended responses allow the qualitative researcher to interpret and present the context as individuals seen and experienced it refusing to predetermine those perspectives. Direct quotations record the human participants' depth of emotions, lived experiences, understandings about what is occurring, and interpretation at a personalized level. Moreover, qualitative results have the characteristics of being much extended, more complete and variable in content than quantitative findings. Focused sampling represents an essential role (Yilmaz, 2013).

2.9. Limitations and challenges of the study

This section covers the limitations and challenges faced related to the nature of the study and the experiences during its process. The first difficulty concerns time constraints and the availability of participants. Data collection took place between 2020 and 2021 in order to obtain information from students, teachers and school subdirectors. Although the authorization to enter the context of the study was previously obtained, travels were necessary to each educational institutions in order to make direct contact with the school directors. Requesting the directors' help to share the link for the application of the questionnaires to teachers and students turned out to be a hard task to do due to their schedule availability. Regarding the carry out of face-to-face interviews with school sub-directors, some of them reported no availability on the previously scheduled date, so it was necessary to reschedule the interviews according to the possibility of the participants. In a few cases, school-sub directors requested that the interview was to be sent by email or opted for a video call due to the constraints presented by the wave of the COVID-19 pandemic which turned out to be the greatest challenge associated with the current research project.

CHAPTER III

SUB – STUDY 1: ECUADORIAN TEACHERS´ CONCEPTIONS OF ASSESSMENT IN SECONDARY PUBLIC EDUCATION

Chapter III – Sub -Study 1: Ecuadorian Teachers' Conceptions of Assessment in Secondary Public Education.

In this chapter, data from the questionnaire with teachers from the third year of Bachillerato from thirty – eight secondary public schools are presented, particularly concerning about Ecuadorian teachers' conceptions of assessment. For this sub- study a quantitative approach was implemented, and Confirmatory Factor Analysis (CFA) was used for the data analysis.

Statistical analyses

A series of confirmatory factor analyses (CFA) were conducted to evaluate competing models of the latent structure underlying teachers' responses. The following models were tested:

Model 1 (Brown, 2006, 2008) - four major, intercorrelated factors (i.e., improvement, irrelevance, school accountability, and student accountability), with 1st-order factors for the improvement and irrelevance factors. Improvement had four 1st-order factors (i.e., improves teaching, improves learning, is valid, describes student learning) and irrelevance had three 1st-order factors (i.e., is ignored, is bad, is inaccurate);

Model 2 (Brown & Remesal, 2012) – similar to the previous model, but removes the 1st-order factors within improvement (i.e., the factors assessment improves teaching, improves learning, and describes student learning are removed) and irrelevance (i.e., the factor assessment is bad is removed). The model is depicted in Figure 1B in Brown and Remesal (2012, p. 7).

Model 3 (Brown & Remesal, 2017) - was adapted from Brown and Remesal's (2017) study with Ecuadorian teachers. This structure included several modifications: three of the original first-order factors beneath the "Improvement" second-order factor were removed (except "Teaching"), the two accountability-related factors were merged into a single one, and the "Irrelevance" factor was restructured—splitting "Caution" into a separate factor while merging "Inaccurate" and "Ignore."

Model 4 - a non-hierarchical solution with four correlated first-order factors: Improvement, Irrelevance, School Accountability, and Student Accountability

Model 5 – Similar to the previous model, but the two accountability factors were merged.

Model fit was assessed using a set of widely accepted indices, such as the chi-square statistic (χ^2), the chi-square to degrees of freedom ratio (χ^2/df), the root mean square error of approximation (RMSEA) along with its 90% confidence interval, the gamma hat index, the comparative fit index (CFI), and the standardized root mean square residual (SRMR). Thresholds indicating acceptable model fit included a χ^2/df ratio below 3, gamma and CFI values above .90, and RMSEA and SRMR values under .08

(Browne & Cudeck, 1993; Hu & Bentler, 1999; Marsh et al., 2004; Schermelleh-Engel et al., 2003). To compare competing models, both the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) were used, where lower scores indicated a better model fit. A difference of more than 10 points in AIC values was taken as strong evidence favoring the model with the lower value (Burnham & Anderson, 2004). Models that resulted in inadmissible solutions—such as correlations greater than 1 between latent variables or negative residual variances—were excluded from consideration. Model modifications were made based on both statistical indices (e.g., modification indices) and theoretical rationale (e.g., item redundancy, conceptual overlap). For the most suitable model, the reliability of the factors was evaluated using Cronbach's alpha (α) and McDonald's omega (ω), calculated in jamovi version 2.6.44. Reliability coefficients above .70 were regarded as acceptable (Hair et al., 2009). Next, measurement invariance across gender (male $n=99$; female $n=130$), experience (up to 14 years of experience, $n=151$; more than 14 years of experience, $n=78$), degree (undergraduate or equivalent, $n=165$; master or PhD, $n=64$), and having some hours of pedagogical training (yes, $n=147$; no, $n=82$) was assessed using multigroup confirmatory factor analysis (CFA). A step-by-step procedure was followed to evaluate configural, metric, and scalar invariance, after confirming the model fit for each group independently. To assess whether the model fit remained stable across groups, changes in the Comparative Fit Index (ΔCFI) and the Root Mean Square Error of Approximation ($\Delta RMSEA$) were analyzed. Invariance was considered supported if the change in CFI was 0.01 or less and the change in RMSEA was 0.015 or less (Cheung & Rensvold, 2002; Chen, 2007). After establishing invariance, latent mean comparison was performed, by setting the factor means of the first group to one and estimating freely the mean of the second group in each variable. All CFA, invariance analyses and latent mean difference testing were performed using Mplus version 7, applying the maximum likelihood estimation with robust standard errors (MLR).

Results

Table 14 shows model fit for the tested models in CFA. **Model 1** aimed to replicate the theoretical model used in earlier studies but resulted in inadmissible parameters, including a correlation above 1.0 between latent variables and negative residual variances, indicating poor model specification. Model 2 was also inadmissible due to a correlation greater than 1 between latent constructs. **Model 3** also was inadmissible due to correlations greater than 1 among latent variables. **Model 4** proposed a non-hierarchical solution with four simple, first-order factors: *Improvement*, *Irrelevance*, *School Accountability*, and *Student Accountability*. The initial version of this model did not yield an inadmissible

solution but showed marginal fit (Table 1). A **revised version of Model 4** showed considerably improved fit (Table 1). Revisions included the removal of items 17 and 27 due to low factor loadings (< .30). Item 20 was excluded because modification indices indicated it correlated highly with items from the *Improvement* factor, even though it was theoretically aligned with *Student Accountability*. Items 13 and 24 were also removed due to correlated errors with items 4 and 5, respectively, indicating redundancy. Model 5 consolidated the accountability dimension into a single factor, resulting in a three-factor structure: *Improvement*, *Irrelevance*, and *Accountability*. The initial version had acceptable but suboptimal fit (Table 1).

The revised version of Model 5, which mirrored the refinement steps applied to Model 4, also yielded improved fit statistics (Table 1). Nonetheless, its fit indices and information criteria were slightly inferior to the revised Model 4. Thus, the revised Model 4, which specified four correlated but non-hierarchical factors—Improvement, Irrelevance, School Accountability, and Student Accountability—, including 22 items, outperformed all other models in terms of statistical fit and parsimony, making it the most appropriate representation of the underlying structure in this sample of teachers.

Table 14

Fit for each of the Competing Models

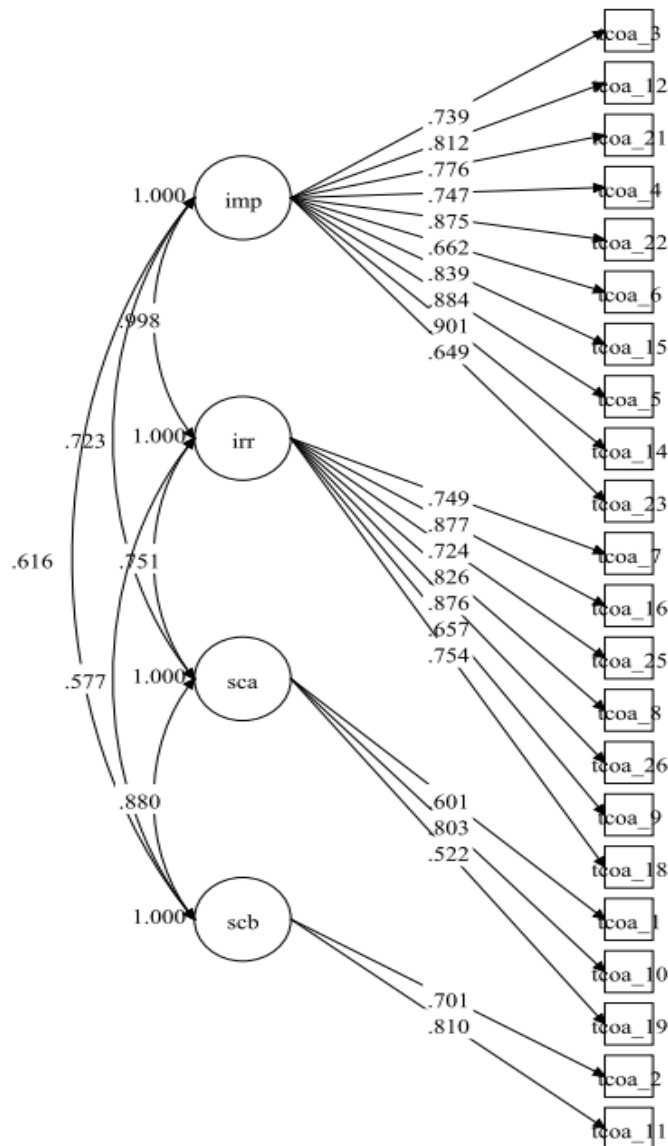
Model	χ^2	df	p	χ^2/df	RMSEA	CFI	Gamma	SRMR	AIC	BIC
Model 1	964.503	311	<.001	3.101	.096	.825	.825	.086	14328.980	14651.750
Model 2	965.715	317	<.001	3.046	.095	.827	.825	.086	14325.514	14627.682
Model 3	999.032	318	<.001	3.142	.097	.818	.819	.087	14374.836	14673.570
Model 4	990.736	318	<.001	3.116	.096	.820	.822	.086	14370.365	14669.099
Model 4 revised	487.714	203	<.001	2.403	.078	.901	.900	.061	11513.135	11760.363
Model 5	995.656	321	<.001	3.102	.096	.820	.820	.086	14372.127	14660.560
Model 5 revised	502.823	206	<.001	2.441	.079	.897	.895	.064	11526.484	11763.411

Note: df = degrees of freedom. RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; CFI = comparative fit index; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion.

Figure 10 presents the factor loadings and intercorrelations among latent variables. All factor loadings were higher than .50.

Figure 10:

Factor Loadings for the Four-Factor Model of Ecuadorian Secondary School Teachers' Conceptions of Assessment



Note: imp= improvement; irr= irrelevance; sca= school accountability; scb= students' accountability.

Reliability was very high for the improvement ($\alpha = .940$; $\omega = .943$) and irrelevance subscales ($\alpha = .905$; $\omega = .908$). It was also high for the students' accountability subscale ($\alpha = .724$; $\omega = .725$), but slightly lower for the school accountability subscale ($\alpha = .674$; $\omega = .685$). Although in this last subscale the reliability values were lower than .70, we decided to retain it due to its low number of items (low number of items negatively influences reliability). Further removing items within this subscale also did not improve reliability.

All factors were significantly correlated (Figure 1). The correlation between improvement and irrelevance was particularly high ($>.90$), and so was students' and schools' accountability ($>.80$). Also, strong correlations were also observed between irrelevance and schools' accountability (.751), and between improvement and schools' accountability (.723). A moderate correlation was observed between improvement and students' accountability (.616). The lowest, but still large, observed correlation (.577), was between students' accountability and irrelevant.

Table 15 shows invariance testing results of the four-factor solution (with 22 items) across gender, degree, experience and having had some hours of pedagogical training. The results indicate no significant decrease in the fit of the metric models compared to the configural models and no significant worse fit of the scalar models compared to metric models, as all ΔCFI were below .01 and $\Delta RMSEA$ were below .015. Thus, measurement invariance across all groups was achieved, suggesting that meaningful comparisons can be performed. The results of latent mean testing indicated no significant gender and degree differences in any of the four factors ($p > .05$), suggesting that male and female teachers do not differ in terms of their conceptions of assessment, nor there is a difference across those who have a master/PhD or an undergraduate degree. The results also indicated no mean differences ($p > .05$) in any of the four dimensions of conceptions of assessment between teachers who had up to 14 years of experience and those who had more experience. Finally, there were also no latent mean differences between those who had some hours of pedagogical training and those who did not have it.

Table 15

Invariance Testing Results

		$\chi^2(df)$	χ^2/df	CFI	RMSEA	SRMR	AIC	BIC	ΔCFI	$\Delta RMSEA$
Gender										
	Configural	816.837(406)***	2.012	.873	.094	.069	11519.950	12014.406	-	-
	Metric	852.988 (424)***	2.012	.867	.094	.079	11503.764	11936.413	.006	.000
	Scalar	877.315 (442)***	1.985	.865	.093	.078	11489.278	11860.120	.002	.001
Degree										
	Configural	888.331 (406)***	2.188	.859	.102	.072	11568.862	12063.318	-	-
	Metric	918.177 (424)***	2.166	.855	.101	.077	11544.622	11977.271	.004	.001
	Scalar	950.824 (442)***	2.151	.851	.100	.080	11540.275	11911.117	.004	.001
Experience										
	Configural	895.511 (406)***	2.206	.855	.103	.072	11499.542	11993.998	-	-
	Metric	921.334 (424)***	2.173	.852	.101	.074	11470.725	11903.374	.003	.002
	Scalar	955.954 (442)***	2.163	.847	.101	.074	11467.564	11838.406	.005	.000
Pedagogical training										
	Configural	766.622 (406)***	1.888	.890	.088	.071	11473.565	11968.021	-	-
	Metric	789.845 (424)***	1.863	.889	.087	.071	11442.999	11875.648	.001	.001
	Scalar	811.800 (442)***	1.837	.887	.085	.072	11424.792	11795.634	.002	.002

CHAPTER IV

SUB – STUDY 2: ASSESSMENT AND TEACHING IN SECONDARY EDUCATION: VIEWS OF THE DIRECTORS AND SUB-DIRECTORS FROM ECUADORIAN PUBLIC SCHOOLS

Chapter IV - Sub – Study 2: Assessment and Teaching in Secondary Education: Views of the Directors and Sub-directors from Ecuadorian Public Schools

4.1. Interview with directors and sub-directors from Ecuadorian public schools

This sub- study presents data collected from directors and sub-directors in secondary public schools. It looks at how Ecuadorian schools directors and sub- directors look at assessment in their school contexts.

Findings are presented according to the emerging themes arising from the data analysis: a) assessment; b) articulation between assessment and the teaching and learning process; c) being a teacher in secondary education; and d) feedback.

Figure 11:

Categories Emerging from Secondary Schools ' Directors and Sub-directors

Assessment
• Most used methods • Moments of implementation • Factors that influence the use of the chosen methods • Essential elements in assessment • Characteristics of assessment • Aspects that need to be improved • Role/participation of the students
Articulation between assessment and the teaching and learning process
Feedback
• Provision • Moments • Ways of providing feedback
Being a teacher in secondary education
• Conceptions of teaching • Most used teaching methods

(Source: Author)

4.2. Findings

4.2.1. Assessment methods

The participants highlighted the most common assessment methods, the factors that influence the selection of the assessment methods, the moments in which assessment occurs, the purposes of assessment and the student participation. Participants refer to the use of a variety of assessment methods, including a mix of learner-centered and traditional methods:

Based on the subject there may be different the kinds of assessment that can be applied (Q3).

There are some kinds of assessment methods that may be applied in the institution (Q18).

If we talk about the assessment methods which have been considered always with our students, there are different forms. From here on, the way of adaptation or the best way (the teacher) is working with the group (students) (Q10).

Participants emphasized the use of alternative assessment methods according to the students' needs. Both collective and individual assessment methods are strongly mentioned by the participants, with an emphasis on individual and collective practical work, essays, reports, or oral presentations:

There are methodologies which are adapted according to the needs of the students. Because the adaptations are also used with the special needs children who study in this and other institutions (Q7).

The most used assessment method is to assess the learning by projects (Q12).

Concept maps, synoptic charts. We also have anecdotic registers. Overall, what I use the most is the anecdotic register (Q18).

In the daily assessment we may say in the same way, oral lessons , and there are some that are applied with the observation methods using forms or rubrics (Q2).

Assessment through group activities (Q11).

Despite this, there are many references to the use of tests and exams. This aspect is reiterated in the participants' accounts:

The most used is the questionnaire method (Q2).

The most used assessment method in this institution always have been tests and exams (Q6).

Regarding the pedagogical part in terms of the most applied assessment methods in this institution, what they (teachers) most do are questionnaires or activities which are more focused to this context (Q11).

...among these methods, as institution we use the method of structured base (exam) (Q14).

The most used assessment method is the evaluation(exam) of structured base (Q23).

Moments of implementation

Regarding the moments in which assessment occurs, there are several references of assessment as a continuous formative process for the benefit of the students. The accounts of the participants is an articulation between continuous and periodic assessment. There are also several references to continuous assessment, which involves a diversity of assessment methods, practical work or projects:

The main (assessment method) must be procedural; that is to say, it should be taken into account all the teaching – learning process in the classroom (Q3).

We start with a diagnostic assessment. After that, we assess the knowledge of the students into the process and then we finish with the feedback (Q8).

Daily, when the class is provided. In that moment (the teacher) is assessing the level of knowledge acquired by the learner (Q9).

We always develop this (the assessment process) during the whole process (teaching -learning process) not just at the beginning or at the end but during the whole process (teaching -learning process) (Q13).

The discussions in the curricular areas make us understand that this kind of assessment is also permanent, interactive, dynamic and with a commitment to improvement (Q16).

We work with permanent continuous assessment. Logically, also working at beginning of the scholar year with our diagnostic assessment into the teaching – learning process, the formative assessment and the summative assessment which is part of the end in each of the stages of the scholar year (Q20).

Factors that influence the chosen assessment method

In terms of the factors that may influence the selection of the assessment methods, participants identified the institutional regulations. Some participants used a different assessment method as a way to monitor if knowledge is being acquired by the learners. The institutional rules appear to influence the selection of the different assessment methods:

It should be noted that we try to comply 100% with the guidelines issued by the Ministry of Education throughout the zone coordination, through the district and therefore through the circuit in the educational field (Q20).

Within what has to do with assessment, there is a technical regulation given from the Ministry of Education (Q16).

It is one of the assessment methods that the Ministry of Education proposes to us in the LOEI regulations. So, we try to do it that way (Q14).

In secondary (education) assessment, generally we consider the same (methods) that are used in all the levels (grades) (Q8).

Some participants asserted that they implement assessment methods that provide them insights if knowledge is being acquired by the students before they take pedagogical decisions:

The assessment of the students must be recurrent, daily, class by class, looking at each of the attitudes that the students have, looking at how collaboration occurs (Q1).

Because it gives me good references and data from the students to know how to apply my methodology, technique or strategy (Q18).

Because the assessment is an aspect for the improvement that allows us to stop and to continue. If that does not happen, we can go back to reinforce to make the learning meaningful (Q3).

Indeed, in a moment with some colleagues we reached the conclusion and the decision to say that the assessment must be formative. That is to say, making the correction of presented mistakes to reinforce the learning of the students (Q16).

Elements considered to be essential for the assessment process

Respondents highlighted that student's state of mind and participation, a good planning of assessment, adequate selection of assessment instruments, the kind of assessment that is used, the diagnostic, traditional tests, the moment of feedback, the application of a contextualized and dynamic assessment, and assessment as a formative /continuous process are essential for the development of the assessment process.

From the participants' accounts the state of mind of the learners as well as their participation are key for the assessment process:

The state of mind of the students is an important element, because if we have an excellent student who arrives at the school to take an assessment with different problems from home (emotional, economic, etc.) it will result in an unsuccessful assessment process, because their mind is in another place (Q1).

In this case, the main elements are the participation of the children, the active participation of them at the time of the development of the teaching - learning that is going on, since this

motivates the student to learn by himself/herself and to learn the knowledge that is being taught (Q8).

The elements of an assessment process are basically related to the learning that the student is acquiring. I have to give the student the freedom to express himself/herself, either orally or in writing (Q10).

I believe that the main element is communication. Communication, in this case, student-teacher, teacher-student, so that this has the desired success (Q13).

The interaction must be collaborative and participatory. If the student collaborates and participates, we will have a participatory lesson where knowledge is acquired by the students (Q21).

Moreover, a good planning of assessment is highlighted by the interviewees as another essential element. This includes the definition of indicators, the identification of learning objectives to be met by the students and the criteria used to assess students' performance

There are different elements, but, among these, the priority we currently have in the education we are experiencing is the assessment indicators. These are those that we could say measure or have exactly the degree of complexity that the student has. That is, to what extent they assimilated a subject, a topic (Q7).

Well, I consider many elements within the assessment process. Within these elements of assessment could be success indicators, assessment indicators, learning objectives. Before starting the process of assessment, there should be a well-founded evaluation system. There must be purposes and general objectives of evaluation, there must be techniques and strategies. They are essential because they enclose everything about assessment and allow assessment to have a meaning (Q18).

A meaningful assessment allows us to achieve the objectives and make the students to reach the goals of comprehension which are linked to skills presented in the curricular planning of the scholar year (Q20).

The essential elements for the learning are based on the success of indicators and the skills of performance (Q22).

An adequate selection of the instruments also seemed a key element in the assessment process identified by one respondent:

Planning, the way we make the evaluation instrument. We have to choose the kind of assessment we are going to apply to our students. Not all the instruments will be similar for the

learners, because we also have students with special needs. In this sense, we must differentiate assessment because we have to make adaptations (Q2).

Other participants identified the diagnostic as essential to the assessment process:

The analysis at the beginning, which is the diagnostic, mainly to know how far the child is (Q4).
At the time of review or feedback, we would have to take that part of reinforcing, giving feedback, to be able to evaluate someone, that is, to give him/her a notion to remember or to analyze what was reviewed in the last lesson. From here we will be able to try to start or start with an assessment process (Q16).

From the view of the participants, traditional tests appear also as essential elements for the assessment process which points to a mix of formative and summative dimensions of assessment:

Tests within the assessment process are now essential because our students, the educational community, do not have the facilities to have technological resources (Q6).

I could say elements like exams, works... (Q19).

On the contrary, an interviewee highlighted the moment feedback is given as an essential element in the assessment process:

... or otherwise, once that assessment has been taken, or reviewed, give the respective feedback of the errors made... (Q16).

The participants asserted that an assessment which is applied in a contextualized and dynamic way represents another essential element. In particular, they identify the nature of the subject and the context in which it is implemented. Added to this is the active participation and interaction with the students:

It would depend on the subject. For example; if we have a practical assessment where a dynamic process with interaction will be generated with the students in a lesson of physics or chemistry, then we will need journals, formats, rubrics, etc. (Q3).

Applicability in daily life. Because learning must serve to develop skills for life, for the encounter with everyday life (Q5).

That students can construct knowledge from reality. A reality that is being lived and put into practice by them based on the reality that is being lived. So, I consider this to be an important element. Not only the knowledge of a subject that is stipulated within a curriculum, but more than that (Q9).

There are many elements that are considered within the assessment process. But I consider that one of the essential elements would be inter-participation. Because if we are not in direct

contact with the students, we do not have an active participation, we cannot know if the student or we have reached a significant learning with them (Q14).

The essential element can be that the student explains or describes what he has learned directly and at the same time what he has learned is also seen. I consider it because there is individual and collective participation (Q15).

The self-assessment of the teacher and the students, and logically the predisposition from the teacher to teach and from the students to learn (Q20).

Assessment as formative /continuous is highlighted by the participants. They state that the process is equally important as the outcome of assessment even though they also emphasize knowledge acquisition:

It is true that there are external factors that can often affect the development of the student when we talk about an assessment, it is important that we (teachers) must not base ourselves so much on that result (from an assessment , but rather in the entire process where the student has been able to develop and demonstrate knowledge that he or she has obtained based on a certain skill (Q11).

First, we ask the students to see if they have acquired the knowledge. If not, we must reinforce it in the areas where children have gaps. We must explain again so the child can get an idea about what the teacher wants to teach or something that is not clear for the learner. That is the reason why assessment is important (Q17).

Characteristics of assessment

Surveyed participants highlighted as positive aspects that assessment they implement is authentic and learner centered; assessment is a device for students' self-regulation; assessment is a contextualized practice; assessment is a guide to know own teaching effectiveness; assessment is a guide to rate the acquired knowledge. The participants claimed as positive aspect the delivery of an assessment which is authentic, and learner centered:

Comic sketches or dramatizations. I assess a lot with dramatizations, with social aspects, with presentations, in oratory (Q1).

It is the fact that we work more in a group way, we go more towards the affective part, we go more to the part of a motivation, to generate in the student that awareness of the importance of doing a physical activity even if it is within the school, but that it is done in a recreational way so that they can improve their state of health and also their mood (Q11).

The positive thing we have, well, is the part of the teacher, the part of the student who is always predisposed to learn. At least I always have that part, which characterized me as a flexible, dynamic person, who knows how to reach the student. (Q19).

Other participants also spoke of their own characteristics as teachers when they describe their assessment methods. Equally important are the teaching methods which also influence, in their views, the way they assess students' learning. Issues of interaction and knowing the students are reiterated in their accounts:

The commitment, that is something innate in each of us. It must always prevail in educational management when I want to teach my lesson, when I prepare my lesson, and when I am with the students. Interaction with the children, not only knowing the curricular content that is being taught by us, but also knowing what is happening in their daily lives. Students are people just like us, and they need permanent support. That predisposition, being ready to elucidate any concern, any doubt they have is fundamental. Logically, we can achieve this through a number of methodologies, which are generally innate to each human being(Q20).

In my subject, the assessment processes are done continuously through intra and extra-curricular activities, and this means that students not only wait for a written test to be able to take their assessment. Assessment is implemented throughout the teaching learning process and that has given me excellent results (Q23).

Participants' accounts showed as positive the use of an assessment which in a device for students' self-regulation:

It has to be with the fact that the children realize that everything always must be assessed. You always have to (assess). We must see how much progress has been made. Even if the results from the assessment of the students are wrong, but always in everything, in every situation you must assess. So, this is a positive aspect for both the teacher and mainly the student who is being assessed in order he/she could realize that always will be assessed for something (Q2).

In addition, the participants also considered assessment as a contextualized practice:

Regarding assessment, the place where we are located. As you can see, the institution has a beautiful landscape. It has a nice place where for instance, while I am especially in my subjects Natural Sciences or Biology, which are more about what the natural environment is, nature, and the phenomena that exist, I can provide a lesson about the ecosystem, and then, immediately I insert what I see around towards the children. You tell them, well, look, let's

analyze what can be used for an investigation. Let us suppose that in Biology I am talking about the scientific method, I say, well, let's see here, we have a lot of trees, why do the trees have leaves in the winter and in the summer they don't? and they (students) begin to develop the scientific method, which is the observation, the experimentation, the implementation of it into practice (Q7).

It is not only the fact of assessing something through a test, or a questionnaire. All the knowledge acquired by the children can be put into practice by them. That practically comes to be the success of an assessment. To know that they (students) have reception of knowledge and can apply it in any case that is generated not only locally, but also, in a broader way (Q8).

Well, I consider that one of the positive aspects is that I am in direct contact with the children. In that way, my lessons are very experimental to guarantee that the knowledge of the children could be better, that they can get a better learning (Q14).

Interviewees' accounts defined as positive the use of an assessment as a guide to understand their own teaching effectiveness along with the importance of self-assessment and feedback:

To see how much progress has been made or if the techniques and the methodologies that I use throughout the time of the lesson have worked to make the children get that learning (Q2).

I consider that it is feedback. Feedback or review before assessing to have a clear proposal of what is going to be done, so that the student knows what assessment is about (Q13).

It (assessments) prevents you from making the same mistakes in the future (Q16).

I see if the child answers the question (assessment instrument) correctly, if there are deficiencies (wrong answers), I have to see what he/she did not understand in order to explain it again (Q17).

I believe the teacher is born and complemented in his/her self-assessment through the purpose or goal setting for oneself as a human being (Q20).

Assessment as a guide to rate the acquired knowledge is also a positive aspect according to the interviewees' accounts:

The fact that we (teachers) could know that we can know the progress or regression of students through this instrument (assessment) (Q3).

On the positive side, the only thing that I can tell you is, when I talk, share, and implement the work in the classroom with them (students), there, I can see if the child is acquiring some knowledge (Q4).

That they (students) may have understood the topics that you have taught them, so, that they come to a real knowledge, that they can respond, understand, and so on... from there one (teacher) can see if the student has already acquired the knowledge or learning that was intended to provide to them (Q9).

The participants spoke of assessment as an opportunity to improve teaching and learning. As such, it needs to be put into practice throughout the process and not only in the end:

It (assessment) should be taken as an opportunity to measure what they (students) have learned or what it is necessary to reinforce or improve. In my personal opinion, I can say that, with my group of students, I don't like to wait until the end to assess them. This must be done periodically, constantly. From there, it is possible to see the gaps that are found in the student to reinforce. I come back and keep going, I do not wait for the last minute to act (Q10).

Well, one may feel satisfied as a teacher when you have taught your lesson, and the student has acquired the main objective of it (Q15).

Despite this, verifying if and to what extent knowledge has been acquired is also reiterated in the participants' accounts:

Well, for me assessment is very positive in many aspects. For example, it helps us to determine the knowledge or degree of knowledge of the students in the way that we the teachers could be able to implement a strategy or something that will allow us to improve the knowledge of the students. Also, the context (the level of knowledge), knowing the context through an assessment and knowing how to act as a teacher (Q18).

Well, the cognitive part is very important to me. This part is very important for me; if the knowledge was acquired, if the student managed to get this knowledge. If he has not acquired it correctly, the learning was not meaningful (Q21).

Aspects that need to be improved

Regarding the aspects of assessment in their teaching practice that need to be improved, the directors and sub – directors pointed some aspects like physical spaces and materials; teachers and students' assessment literacy; the ways of assessment; critical thinking and soft skills of the students; the involvement of parents and students in the assessment process; curricular contents; the provision of feedback.

The participants claimed that physical spaces and materials need to be improved to implement an effective assessment process:

The aspects that I would need to improve in order to assess my students would be a physical aspect. It would be a place where we cannot be interrupted and, at the same time, they (students) can be heard (Q1).

We have a lack of technological tools. We have internet in a part of the school; we have internet in the computing area. However, there are a lot of classes. So, I believe that we (teachers) should have a projector or a computer in each classroom (Q7).

We need to provide ourselves with a lot of didactic material. That would be one of the negative elements that we have today. It is true, the teacher has to use his/her creativity to be able to obtain that material (Q14).

Respondents also stated that teachers and students' assessment literacy is necessary in order to use different modes of assessing, to go beyond the use of written tests and to make assessment also a learning experience for both students and teachers. Continuous learning is part of being a teacher and assessment is one aspect that deserves more attention and training:

It's the kind of assessment we usually apply. Sometimes we implement only one type of assessment, a written test. We do not look for other ways of assessment. We don't do it because other teachers get upset or they say no, you can't do that because that is not right (Q2).

We have to improve a lot on the written part (written test). There is a lot of difficulty at time in structuring a written exam for the students. It seems like we want to instill fear in the students, and it shouldn't be like that. Assessment must be a confidence, a security about what they are going to do and learning. So, I believe that one of the aspects that should be improved is precisely that written assessment, which seems mandatory to us (Q10).

From the work carried out by fellow teachers, I believe that training should never end. The socialization of assessment issues in area meetings. To see how important the assessment is in a specific time, why we set specific dates when assessment must be permanent (Q16).

I believe that there are internal and external factors that can affect the teaching-learning process. We as teachers need to continue learning. To continue our preparation to improve this teaching-learning process, because everything is advancing in this life, the technology, the technological applications, the pedagogical resources, the reality of the environment where the student is involved (Q20).

The key informants said that the type of assessment must be improved, namely with regard to assessment methods and moments as well as the participation of the students in assessment:

Yes, you can assess, as I said before, the children go out to the field. For instance; outside the classroom and they can be assessed there. They can be assessed in a different way (Q2).

To Improve, maybe the type of assessment. More than the type of assessment, the instrument. If we get students used to reviewing certain instruments such as checklists or structured tests. That could be an aspect that would need to be improved and that should be implemented from the lower levels so that later in the future we can take this aspect into account (Q3).

The improvement that should be done is to make dynamic and applicative to the environment the teaching process of mathematics; implementing it in the student's environment. To this end, we are working with classroom projects, for learning to become more meaningful. It provides the student with a reason to reflect about why and what for he/she is learning a topic (Q12).

... and in the aspects that need improvement is perhaps to find more dynamic activities that motivate students to learn and be better every day (Q23).

Interviewees' accounts defined critical thinking and soft skills of the students as aspects that need improvement:

Another important aspect that I have noticed in students is not following instructions. The student at the time of making his/her written or oral assessment only follows certain parts of the information and does not read all the questions, does not analyze. In contrary, he/she wanted to make the assessment quickly and that is the reason of the fault. A fault that is based on a low grade and not in a lack of knowledge (of the student) (Q3).

Contrasting information through different sources is important. To work at it as the basis of a level and not just addressing it in a 10-month course, I believe, that is what needs to be improved (Q5).

To improve the involvement of parents and students in the assessment process is highlighted by the respondents too:

What we have to improve at this time, right now, for example, is also to guide parents a little more. To make them aware. Because there are parents who say that they work and do not have the time to share with their children. However, they do have time. So, for the parents

would be provided more orientation, guide them through a school of parents where they could be aware and become guides of their children (Q4).

It refers to the predisposition of the students. That is what needs to be improved (Q6).

Once the results have been obtained, logically we have to reinforce what has failed. For example; requesting the involvement of not only teachers-students, but the entire educational community, especially parents (Q13).

Yes, also one of the negative factors is that we do not have support from parents at home. In the environment where we are, children often manage on their own because their parents leave them alone and do not support them. We don't have support from parents (Q14).

Sometimes we see students whose parents need to implement a strong hand. It means teaching a little (to the students), to apply that knowledge more at home. We can teach, but at home parents have to help (students) with their homework in order they can acquire the knowledge (Q17).

As I mentioned before, the affective part from the parents. They practically leave the student alone and then we can see the consequences. Sometimes the student tries to defend himself/herself. Therefore, emotional support from the family is needed. To know that the family is there. That is something we have within the institution (Q19).

Participants declared there is a need of improvement the curricular contents to make the assessment process more effective:

Well, in that case, practically referring to the International Baccalaureate program, generally the children take external theories and forget about the internal part. That is, the part of his/her city, his/her province. Practically all the knowledge goes to what is macro and we leave the micro, which is very useful to the students. Because it is there where they (students) could apply the acquired knowledge to provide solutions to certain problems that may be generated (Q8).

Always there will be basic aspects. I believe that we find a lot of shortcomings in the students at the level of basic education. For example, they don't have a real knowledge about basic topics like multiplications or law of signs. Those are specific topics that students must know to continue with the development or assimilation of the subject (Mathematics). I consider the foundation in this subject is essential for each student, so, they will have real and easier learning in the future school years. (Q9).

One respondent argued that the way feedback is given must be improved:

I believe that we must continue reinforcing these practices of feedback. We must think more in the application of formative assessment and make summative assessment by the technical point of view of the ministry of education disappear. We do not provide feedback; we just see who made mistakes and that is all. We did not provide feedback about the topic that was reviewed (Q16).

Students' participation in the assessment process

All the participants (100%) asserted that the learners participate in the assessment process.

Even though all directors and sub-directors claimed students' participation in the assessment process, according to the interviewees' accounts it is noted that there are passive or traditional participation; active and continuous participation; passive and active participation; and a participation which is promoted by a tension between the assessment they must apply for and the assessment they wish they could apply. Key informants defined students' participation as passive or traditional:

Of course they participate. They are the first who participate in this situation at every moment. Summative assessment in the institution is taken at every moment from the beginning of the lesson. Teachers also use assessment to identify the amount of knowledge that the students have (Q7).

The students are the core of this process. Because they are going to show in the assessment what they have learned in each of the skills. In the moment when the instruments are presented according to the assessment indicators. It does not mean that the topics in the assessment are specifically presented. However, the assessment indicators are analyzed (Q12). They participate, for example, the teacher explains the lesson through the practice, the learners observe and then they (students) have to demonstrate about what they have been learning (Q15).

Active and continuous participation of the students is also highlighted according to interviewees' accounts. They refer to informal participation but also when they do self-assessment and participate in the activities in the classroom:

We also have self-assessment where the students are aware if they are leaning or not into the pedagogic frame where they are. So, the students can also visualize or express their point of view about the teacher and what is necessary to change and that is part of the assessment process (Q2).

The first aspect is ...because they are the ones who regulate and allow the teacher to visualize if the shared contents and the applied methods are accurate. So, if we have a low index from the assessment, that means that changes and modification must be made (Q3).

Yes, of course, the kids are assessing from the beginning until the end of the lesson, daily, every day. That is done in all aspects, having a conversation with them, explaining the lesson, at every moment (Q4).

They participate during the whole educational process, through individual works such as; expositions and tests. Also, through group activities, collaborative works, dramatizations and the work with the community through the community outreach program (Q5).

They participate when we make the curricular and institutional plan. We must involve a delegate of the students in order for them to know the way assessment works in the institution (Q6).

Students must be in the assessment process. Because they and the teacher are the actors in the process. They are in all the stages of the assessment process through active participation which is done at every moment of the lessons provided (Q8).

The participants also highlight the participation of the students through the oral interaction with their teachers in the classroom which can occur at the beginning, during and at the end of the teaching and learning process:

...especially in the moment of the oral interaction they participate a lot in the assessment process we implement as teachers in the classroom. Because an assessment does not have an exclusive date, it should be in the middle or at the end of the lesson. Moreover, I can assess them at the beginning (Q10).

They participate in developing the activities that the teacher implements for the assessment process through an active participation (Q11).

...because they are an important part of this process. They actively participate before, during and after (Q13).

Students participate in this assessment process in an interactive way during the moment we are providing our lessons. We (teachers) start to interact with the learners and at the same time we assess if the students are getting the knowledge or not (Q14).

...there are participations into the classroom in the stages of the interaction and the critical thinking practiced by each student into the classroom (Q16).

...making them direct questions or using sheets of paper. The assessment is continuous in the teaching-learning process (Q17).

They participate in the assessment process practically during the whole year. We know that there is self-assessment, teacher assessment and peer assessment. So, the students participate in all these aspects (Q18).

Obviously, students constantly participate in the three moments of assessment, diagnostic, formative and summative (Q23).

They participate constantly, and the way is always using tools according to the students' needs (Q19).

One respondent stated that the participation of the students involves passive and active moments:

They do it daily, when the learning cycle is being applied. Our colleagues begin the diagnostic process where they can see if the knowledge has been acquired. They (teachers) are assessing, and then, at the end... For the application part they (teachers) assess the students through questions or graphics organizers (Q21).

One participant asserted there is a tension between the assessment they must apply for and the assessment they wish they could apply:

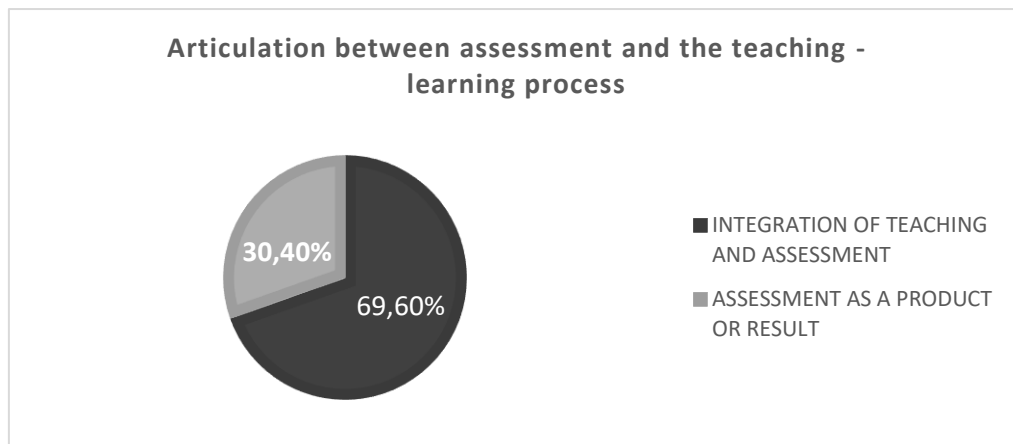
They participate in the assessment process orally, with tests or with any activity. Then, a grade is assigned according to the models provided by the Ministry of education. There is a specific moment when we say evaluation week. However, we say that assessment is formative, continuous, daily or permanent (Q16).

4.2.2. Articulation between assessment and the teaching and learning process

Data in figure 12 showed that for most of the participants the articulation between the assessment with the teaching and learning process is made when continuous formative assessment is integrated into the teaching learning process. Moreover, 7 key informants claimed that the articulation is made when what is taught in class is assessed.

Figure 12:

Articulation between Assessment and Teaching-Learning Process



Again, participants stated that a continuous assessment into the teaching learning process allows the teachers to assess if the knowledge is being acquired by the students:

I believe that within the entire teaching process the assessment is immersed. So, as I said, it is a processual assessment, where every aspect that is considered, from the experience until we finish with the application, is an aspect that is assessed whether the student is learning or not (Q3).

...that way I articulate my knowledge and I'm seeing a constant evaluation with them (students) if they're really paying attention to me or not (Q4).

There are different kinds of assessment, they can be written or oral, but my way of assessing the kids, and to know if they have assimilated the contents that I have taken to the classroom, is when you ask questions. That is the oral part when you ask the kids “who understood”, “what do you think”... well, if the kids do not answer, I know that there is something they did not understand... I can't move forward until they understand that part (Q7).

Assessment is daily within the classroom, in the way that when you teach the lesson and then, when you provide feedback, you ask questions to the student, you wait, and then, you assess the level the student has assimilated taking into account his/her answer or participation in the classroom. So, I think that the most important assessment is when you are continuously assessing (Q9).

In mathematics it is imperative to evaluate processes. The teacher assesses the kid according to how he/she is developing his/her knowledge (Q12).

I cannot continue with a new topic, without knowing that the student understood, accomplished that objective and that learning skill. If that does not happen, I will continue drilling that topic until everything is completed. After that, I move forward (Q19).

I like to work with the flipped classroom where the students are very collaborative and very participatory, so, in the application the students have to make their presentation, they have to show the work they were doing, because this gives me the guideline whether the knowledge was acquired and if they (students) built the knowledge (Q21).

This articulation between teaching and assessment is an opportunity for reflection that allows the teachers to regulate their teaching and pedagogical approaches according to the respondents:

Yes, you can evaluate and teach, and you can teach and evaluate, because it is not only from the teaching practice that we are the ones who evaluate, because the students indirectly without handling or handling the term of evaluation much, they also brand or label you when you are in your daily teaching practice, your work, your professionalism. They may say, “he knows the subject”, “maybe he doesn't know”, “I don't understand him, I do understand”, and when they (students) say that you must find the way to make the students to get the knowledge (Q16).

It is important to know that the assessment process is not only a grade or a score. It is not only to teach content and to assess it (Q20).

I believe that the teaching-learning process is automatically articulated with the assessment process. As I have mentioned from the beginning, it comes in a systematic and continuous way. Then, at all the moments of the teaching-learning process, the student is assessed. He is gradually assessed to know many aspects that we can correct in the future (Q18).

This articulation is done constantly. Because I can start my class with feedback, after this feedback I can start with a diagnosis of the knowledge acquired... (Q8).

Participants highlighted that they transform the articulation into an opportunity to directly involve the learners into the practice:

I have to organize my lesson with a goal, and I have to articulate that goal with practice or experience, with the experiment that I am going to make (Q14).

Let's see, I like in my subject informatics, the students could be very practical. I like it, the student going directly to practice, and if I want to assess him/her in that way, I need to transform theory into practice. That is what I do in my lesson (Q6).

...the way how I organize the learning of the students is through classroom activities, such as the formation of group works where they are organized, they make conceptual maps and then they present their works in an exposition. This provides an excellent result where the proposed objectives are achieved (Q23).

The participants asserted that the articulation between assessment and the teaching and learning process is done in the way that they guarantee that the content that is taught is the same that is assessed. They emphasize that what is assessed needs to be in accordance with what has been taught:

When a person assesses what he/she wants to evaluate, it must be in accordance with what was taught... So, in that way I can link, concatenate the contents and assessment(Q2).

You always must be coherent between what you say and what you do. That is fundamental for every teacher. So, it is necessary that what I teach, what is analyzed and the conclusions reached in the classroom could be really considered in the assessment tests. I'm not going to talk about one thing and at the end ask another. (Q10).

Well, one of the things in what we must be clear is that we must always assess according to what has been taught . We cannot assess things that are not related to the topic (Q13).

I always assess what I teach, what is planned into the pedagogical units. So, I can't assess contents that I haven't taught, I always assess what I teach, what I present in the lesson (Q15).

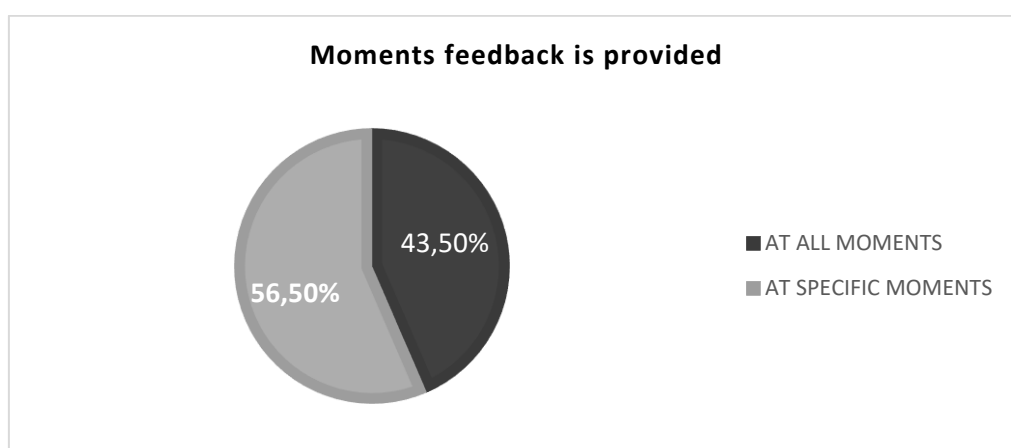
Well, first it must be with the topics that I am going to provide in every lesson. The assessment must be aligned with the topic that I am going to present. They (the assessment and the teaching and learning process) have to go hand in hand. If that does not happen, and content reviewed is not included, I cannot implement the assessment process (Q17).

4.2.3. Feedback

All the participants (100 %) asserted they provide feedback to their pupils. Figure 13 presents the descriptive statistics regarding to the moments feedback is provided by the participant. The majority of the participants (56.50 %) asserted they provide feedback to their pupils at specific moments; (43.50 %) recognized they provide feedback at all moments.

Figure 13:

Moments when Feedback is Provided by the Teachers



Their accounts make explicit what they want to say when they talk about feedback. Providing students with information about their learning is considered to be key to help them learn better:

We have to provide daily, constant feedback. A clear example that the feedback process must be constant is that you (the teacher) cannot advance to a next content, if you do not give feedback when it is required (Q3).

Always when we are teaching. It is important to start with the feedback immediately we arrive to the classroom... (Q9).

Feedback is the same as motivation. It does not necessarily have to be done at the beginning, it is in the development of the lesson that the teacher has to look for a time to provide that feedback (Q11).

It (feedback) is very important within the educational field, the teacher has to provide feedback daily, constantly at the time we are teaching our lessons...(Q14).

Constantly, every time a topic is taught... every time I teach a topic, I always try to reinforce by asking questions. As my subject is practical, I ask them (students) to confirm the understanding

of the topic, and if someone says that something was missing, well, I continue explaining until the topic we are working on is clear. So, in that way we are constantly providing feedback (Q19).

At the beginning of a school year, we as teachers try to have a very close dialogue with the kids to link the contents of the previous year with the new ones and we do the same lesson by lesson. In this sense, the feedback process is essential, and it must be permanent (Q20).

Ways of providing feedback

Regarding how feedback is given to the students, the interviewees claimed preference for collective, oral and collective, oral, individual as well as written feedback. The participants declared they give collective feedback:

For me feedback must be collective. There, everybody (every student) participates, and the teacher does not have intervention because when a question appears and some students are able to provide the correct answer, the other students can tell each other, "well, who has the wrong answer; I have this answer" In this sense, they are correcting each other points of view or the way they had worked (Q1).

It can be done collectively...if the feedback is mostly for the group, it will be collective (Q2).

We always do it collectively. We give feedback collectively and after that, we do a type of brainstorming in which the students provide their criteria...(Q11).

It is also carried out collectively or in groups, since schedules are established (Q12).

Collective and oral as preferred way to give feedback is highlighted by the participants. The participants state that oral feedback tends to be more effective as it is provided in real time to the students, and they can ask questions about how to improve. Issues of time and support are also at the forefront of the reasons to prefer oral than written feedback:

In general, when you teach it is oral, in a group. You ask questions about the previous lesson, about the previous topic, what they (students) found most interesting, most relevant, it's usually like that (Q9).

I tell you that depending on the case. If during the lesson, we see a student who needs (feedback) in that way it becomes individual. Otherwise, if there are 2 or more (students), then it (feedback) becomes collective... (Q13).

I do use... collective, oral. Because when there is a situation where everyone should express something, they express it. Written daily no. Because of time it doesn't work, but oral it does. (Q21).

It is noted that the use of written feedback is scarce “due the time is not enough” (Q21).

I do it through questions and answers. In an initial way, we can make them volunteer for students who want to participate. They can raise their hands and give their immediate answer.

If not, there is another way to do it, for example, it can be through games, cards... (Q10).

I do it (feedback) more orally. I think that oral interaction is fundamental within the classroom.

Of course, an orality with respect and taking turns, where everyone analyzes the topic... (Q16).

Also, when an explanation, task, or activity is finished, (the teacher) makes a comment in a general way for the students and I always get used to it orally (Q18).

Interviewees' accounts showed that individual feedback is used in specific moments like the developing of the lessons depending also on the number of students per class and on the characteristics of the students:

In general, individual when they (students) are few (Q2).

There are times when it is required to be done individualized, specifically with special needs students and those who have difficulty learning a specific subject (Q12).

I tell you that depending on the case, for example, if during the lesson we see a student who needs (feedback), at that moment it becomes individual (Q13).

We do it in this case, in my case individually with the children who have educational needs (Q14).

Usually, it is individual. For example, if a student makes an individual participation, the teacher approaches the student and gives him a positive comment. So, the student can do his best to correct or improve some situation (Q18).

The implementation of written feedback is declared by few respondents.

It can also be done in writing, in some type of assessment agreed with the student (Q9).

At the end, it comes in written form, where you can also interact in 5 or 6 lines (Q16).

Through the written way, it is also sometimes a good thing... (Q19).

4.2.4. Being a teacher in secondary education

Conceptions of teaching

Participants declared their teaching styles as constructivist, innovative and creative, interactive and participative, adaptative, active and ludic, demanding with commitment to learning; and communicative and supportive. The participants emphasized that their approach is aligned with constructivism, in which the student assumes an active role in the construction of their knowledge:

I believe that my teaching is a constructivist teaching...I simply provide guidelines, and he/she (the student) builds (knowledge) (Q1).

My teaching style always goes for that method, the pedagogical method or that pedagogical current of Vygotsky, which precisely talks about constructivism. I think I'm going that way, in that direction (Q18).

I think that what I am always looking for in my teaching style is on the part of constructivism.

The student explains, presents his/her ideas, and then we start the lesson (Q21).

The need to be innovative and creative to capture the attention of students and adapting methodologies is recurrent in the participants' accounts:

The teacher must be creative... and this creativity will allow him/her to innovate (Q3).

I am a dynamic person ... I look for my alternatives and I align myself to the reality of the student (Q19).

The participants highlighted the importance of interactive and participatory lessons, encouraging dialogue and collaboration:

Interactive. I like a participatory lesson where the student elaborates and clears up doubts (Q10).

I describe it (teaching style) as an active teaching, as students are involved in the learning process (Q23).

Perhaps mine (teaching style) goes by the dynamic of interaction, participation. I always go in this way (Q16).

There is evidence of a concern among the participants about connecting teaching with the student's context, using modern tools and real cases:

We make the subject as dynamic as possible... exposing the student to real cases (Q9).

Well, as I indicated to you before, natural sciences need to be taught in an experimental way (Q14).

I use ICT support... and we apply the topics to the environment where they (students) live (Q12).

The participants declared their teaching style involves strategies such as ludic teaching and innovative methodologies like the flipped classroom:

I unquestionably bet on the ludic part... I can motivate and make them develop skills without they feel pressure (Q11).

I use the flipped classroom a lot... in this way learning is also collaborative and participatory (Q21).

Some participants describe their teaching style as demanding, ensuring that their main goal is to make real learning of the students:

I'm very demanding. The main characteristic is, I actually want them (students) to learn (Q6).

I describe myself (teaching practice) in a direct way. I explain the exercise, and then, they (students) practice it. After they practiced it, I assess what they have learned (Q15).

I like when children can learn, I like how they can assimilate the knowledge and then put it into practice (Q7).

The participants highlighted the value of effective communication and accompaniment to describe their teaching style:

I believe it's communication. Communicative, because if there is no communication, it will be difficult to get students' understanding (Q13).

Being a companion...mainly of the student and his/her family (Q20).

I like to talk a lot with my students, to repeat, to discuss, and to communicate with them during the lesson (Q4).

Most used teaching methods

According to interviewees' accounts the privileged methods in their teaching practice are deductive-inductive, constructivist, experimental, critical analysis, and procedural. The participants define deductive-inductive methods as a base to build learning from the combination of specific and general concepts:

I think that the methodology we use is a deductive-inductive method, where the process comes and goes. We cannot be based on the fact that only I speak and speak. There will be an exchange (Q1).

Those methods are deductive – inductive (Q4).

Deductive method, also the inductive. We have a lot of methods to teach but when we are in the classroom it is not the same. It is not the same, because we have students with different points of view. Moreover, we have many students in the classrooms (Q7).

I prefer the inductive method. It starts from the previous knowledge of the students, inquiring, developing during the lesson with the goal they (students) could have their own conclusions about the topic at the end of the lesson (Q10).

Constructivism occupies a prominent place into the interviewees' accounts:

Precisely according to what has been said above, it is constructivism, because it starts from the fact that knowledge comes from the student himself/herself, what one does is the role of a guide who is able to direct him/her (student) in this learning process (Q13).

That is good because they (students) can learn by themselves and what we assume as teachers is the role of a guide, advisor or what could be a teacher today... (Q2).

The experimental method is valued by some participants:

In my case experimental method, because it is the method in which the child can do his own experiment, he/she acquires his/her knowledge and that remains for life (Q14).

The experimental method. I like to show students a lot about reality and how the learning they will obtain could be used in their future life (Q3).

In addition, participants declared preference for critical analysis:

The method that has always appealed to me the most is critical analysis. It leads me to train, exchange ideas and enrich my knowledge to teach in a better way (Q4).

I highly value the criticality of the students' theories or paradigms. Doubts are valued as a link to knowledge (Q5).

4.3. Summary

In this sub-study the accounts of the directors and sub-directors from the Ecuadorian secondary public schools reveal that assessment is a critical component of the teaching and learning process. Moreover, the participants assert that efforts are being made to insert a diversity of continuous assessment practices. However, findings reveal some constraints like the use of both traditional (tests, exams) and alternative methods (projects, oral presentations). Furthermore, participants acknowledge the benefits of continuous formative assessment for its ability to provide real-time insights into student progress. However, on the other hand it is noted that assessment practices are regulated by the guidelines of the Ministry of Education which often limit innovative contextualized assessment practices. Thus, the lack of resources, insufficient parents' involvement, scarce teacher training/literacy about assessment become substantial barriers for a successful contextualized process of assessment.

The participation of the students appears to be largely passive despite the interviewees assert they encourage their pupils to be involved. From the findings it is noted that the role of the learners into the assessment is oriented just to the moment that the assessment is implemented by the teachers. In other words, they participate but when and how the teacher dictates.

CHAPTER V

SUB – STUDY 3: ECUADORIAN STUDENTS´ CONCEPTIONS OF ASSESSMENT IN PUBLIC

SECONDARY EDUCATION

Chapter V - Sub – Study 3: Ecuadorian Students´ Conceptions of Assessment in Public Secondary Education

This chapter reports data collected from 996 students attended third year of “bachillerato” in thirty – eight public secondary schools from Ecuador. This sub-study aims (1) to look at students’ conceptions of assessment in Ecuadorian public secondary schools (2) evaluate student and institutional factors impinging upon how Ecuadorian students respond to the questionnaire “Students Conceptions of Assessment version VI” inventory (Brown 2008).

An adapted Spanish version of the Students Conceptions of Assessment (SCoA-VI) inventory was administered online to the respondents. It focused particularly on how students conceive the purpose, nature and function of assessment. For example; assessment is for improvement, it predicts the student’s future, it improves classroom climate, and it is irrelevant.

Even though the SCoA-VI originally used a positively packed rating scale, for this sub-study a 28-item questionnaire was applied adopting a five -point Likert scale, as practiced in previous studies (Gonçalves 2012; Flores et al. 2020). 1 = strongly disagree and 5 = strongly agree. “Note, while completely conventional, the restricted number of options in the positive and negative ranges usually reduces variance in the data, potentially making modelling somewhat more complicated” (Flores et al. 2020).

Through a quantitative approach, Confirmatory Factor Analysis (CFA) was used for data analysis in order to test two models based on Matos & Brown (2015) and Matos, Brown, & Gomes (2019). Models were calculated with MLR (Maximum likelihood with robust standard errors) estimator.

Statistical analysis

The database contained no missing values. To evaluate the factor structure of the Students’ Conceptions of Assessment (SCoA) inventory, six models were tested through Confirmatory Factor Analysis (CFA), each informed by prior research:

Model 1: Model with four correlated factors as tested in Flores et al. (2020) with students in higher education;

Model 2: Model with eight correlated factors as in Matos and Brown (2015) and Flores et al. (2020) with students in higher education;

Model 3: Hierarchical model with four 2nd order factors and eight 1st order factors as theoretical framework of the inventory suggested by Brown (2011) in Michaelides & Solomonidou (2016).

Model 4: Hierarchical model with four 2nd order factors and seven 1st order factors as tested in Michaelides & Solomonidou, (2016) and Solomonidou & Michaelides (2017)

Model 5: Bifactor model with a general factor and four main factors as tested by Weekers et al. (2009);

Model 6: Bifactor with a general factor and three specific factors (Matos, Brown, & Gomes, 2019)

Model fit was evaluated using standard fit indices, including the chi-square statistic (χ^2), the ratio of chi-square to degrees of freedom (χ^2/df), the root mean square error of approximation (RMSEA) with 90% confidence intervals, the gamma hat index, the comparative fit index (CFI), the standardized root mean square residual (SRMR). A χ^2/df lower than 3, a gamma and a CFI higher than .90, a RMSEA and SRMR lower than .08 were considered as indicators of an adequate fit (Browne & Cudeck, 1993; Hu & Bentler, 1999; Marsh et al., 2004; Schermelleh-Engel et al., 2003).

To choose between competing models, the Akaike information criterion (AIC) and the Bayesian information criterion (BIC) were also employed, with lower values indicating a better fitting model. Additionally, when comparing different models, a difference of more than 10 points in the AIC suggests that the model with the lower value provides a substantially better fit to the data (Burnham & Anderson, 2004). For the factors of the best fitting model, reliability was tested by computing the Cronbach's alpha (α) and McDonald's omega (ω), using jamovi 2.6.44. Values higher than .70 are conventionally considered adequate (Hair et al., 2009).

Next, invariance as a function of gender (male/female) and age (up to 17 years old/more than 17 years old) was tested by means of multigroup CFA. Configural, metric, and scalar invariance were evaluated using a stepwise approach, after checking model fit for each group separately. To determine whether model fit remained consistent, changes in the CFI and the RMSEA were examined. A change of 0.01 or less in the CFI and a change of 0.015 or less in the RMSEA indicate that measurement invariance can be assumed (Cheung & Rensvold, 2002; Chen, 2007).

CFA and invariance testing were conducted using Mplus version 7, employing the Maximum Likelihood with Robust standard errors (MLR) estimator. After determining measurement invariance, a multivariate analysis of variance (MANOVA) was conducted to assess how students' gender and age characteristics influenced their scores on the different SCoA factors. The MANOVA was computed using factor scores. The magnitude of these effects was evaluated using partial eta squared (η^2), which represents the proportion of variance in the dependent variables that can be attributed to each independent variable. According to Cohen (1988), values of partial eta squared equal or higher than .14 indicate a large effect, higher than .06 indicate a medium effect, and values higher than .01 indicate a small effect.

Results

Model selection and factor correlations

Table 16 presents the fit indices for the six tested models. Among all the tested models, the eight-factor correlated model (Model 2) showed the best overall fit to the data, outperforming the other alternatives in both fit indices and information criteria. Compared to the second-best fitting model (Model 5), Model 2 had an AIC value more than 10 points lower. As depicted in Figure 14, all items in this model had loadings greater than .30 on their respective factors. In this model, several statistically significant correlations emerged between the factors (Table 17). Strong positive correlations were observed between the perception that assessment benefits the class environment and the belief that assessment is enjoyable ($r = .893, p < .001$), as well as between the perception that assessment is enjoyable and the belief that it improves teachers' instruction ($r = .923, p < .001$), between the perception that assessment predicts the student's future and the belief that assessment makes students accountable ($r = .821, p < .001$), and also between the perception that assessment improves students' learning and the belief that assessment improves teachers' instruction ($r = .794, p < .001$). In contrast, notable negative correlations were found between the view that assessment is irrelevant and its role in predicting the student's future ($r = -.319, p < .001$), and between the belief that assessment is bad and the perception that it improves teachers' instruction ($r = -.202, p < .01$), and also the belief that assessment is irrelevant and the perception that it is enjoyable ($r = -.212, p < .01$). These results suggest that positive conceptions of assessment tend to cluster together, while negative views appear to be more independent or inversely associated with functional conceptions of assessment. However, it is worth noting that some factors showed low reliability (Table 17), particularly those composed of only two items. Although a minimum reliability coefficient of .70 is traditionally considered acceptable in the literature, lower values may be deemed acceptable when the number of items is small (Taber, 2018).

Table 16

Model Fit Indicators

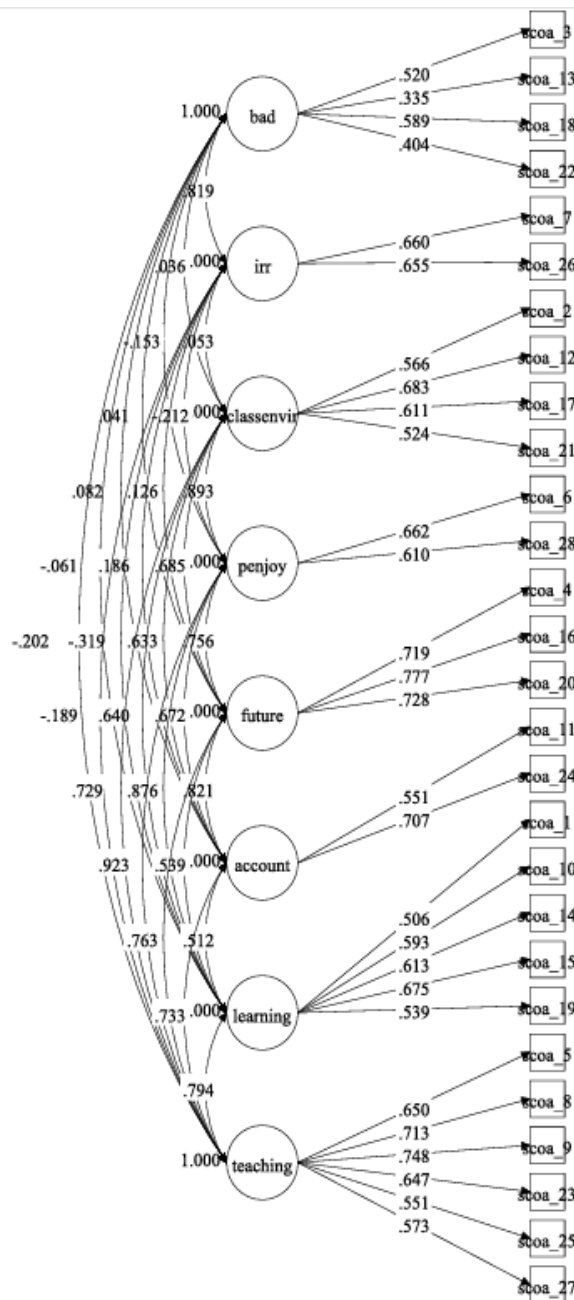
#model	Description	χ^2 (df)	p	χ^2/df	RMSEA [90% CI]	Gam ma hat	CFI	SRMR	AIC	BIC
Model 1	Four correlated factors	1191.506 (344)	<.00 1	3.46 4	.050 [.047, .053]	.942	.865	.062	65116.3 52	65557.6 89
Model 2	Eight correlated factors	921.340 (322)	<.00 1	2.86 1	.043 [.040, .047]	.959	.905	.057	64794.0 70	65343.2 90
Model 3	Four 2 nd order factors + Eight 1 st order factors	1004.375 (336)	<.00 1	2.98 9	.045 [.042, .048]	.954	.894	.060	64878.4 26	65358.9 93
Model 4	Four 2 nd order factors + Seven 1 st order factors	1007.166 (337)	<.00 1	2.98 9	.045 [.042, .048]	.954	.893	.060	64880.9 38	65356.6 02
Model 5	Bifactor with four specific factors	940.774 (322)	<.00 1	2.92 2	.044 [.041, .047]	.957	.902	.049	64805.7 34	65354.9 54
Model 6	Bifactor with three specific factors	1056.053 (329)	<.00 1	3.21 0	.047 [.044, .050]	.951	.884	.048	64963.9 72	65478.8 66

χ^2 , chi-square statistic; *df*, degree of freedom; p, P-value; RMSEA, root mean square error of approximation; CFI, comparative fit index; SRMR, standardized root mean square residual; AIC, Akaike information criterion; BIC, Bayesian Information Criterion.

Note: All models with MLR estimator

Figure 14

Standardized Coefficients for the 8-Factor Model.



Note: bad= assessment is bad; irr= assessment is irrelevant; classenvir= assessment benefits the class environment; penjoy= assessment is enjoyable in a personal level of the students; student future= student future; account= assessment makes students accountable; learning= assessment improves students' learning; teaching= assessment improves teachers' instruction

Table 17

Descriptive Statistics, Reliability and Factor Covariances for the 8-Factor Model

Factor	#items	Reliability		Descriptive statistics (factor scores)						1.	2.	3.	4.	5.	6.	7.	8.
				Male		Female		Total									
		α	ω	M	SD	M	SD	M	SD								
1. Bad	4	.511	.524	0.09	0.85	-.009	0.78	0.00	0.82	-	.819**	.036	-.153	.041	.082	-.061	-.202*
2. Irrelevant	2	.602	.604	0.12	0.88	-.011	0.80	0.00	0.85		-	.053	-.212*	.126*	.186*	-.319**	-.189**
3. Benefits the class environment	4	.684	.688	0.05	0.92	-.005	0.87	0.00	0.89			-	.893**	.685**	.633**	.640**	.729**
4. Enjoyable in a personal level	2	.565	.576	0.02	0.98	-.002	0.93	0.00	0.95				-	.756**	.672**	.876**	.923**
5. Student future	3	.778	.787	0.07	0.88	-.007	0.95	0.00	0.92					-	.821**	.539**	.763**
6. Makes students accountable	2	.557	.561	0.08	0.85	-.007	0.89	0.00	0.87						-	.512**	.733**
7. Improves students' learning	5	.718	.724	-.002	0.95	0.01	0.86	0.00	0.90							-	.794**
8. Improves teachers' instruction	6	.809	.812	0.03	0.95	-.002	0.94	0.00	0.94								-

*p<.05; **p<.01; ***p<.001

Model invariance and differences as a function of gender and age

Table 18 presents the model fit for gender and age groups and for the configural, metric, and scalar invariance models. Measurement invariance tests confirmed that the eight-factor model structure held consistently across gender and age groups. The ΔCFI and $\Delta RMSEA$ was lower than .01 when comparing the configural and metric models and the metric and scalar models. These findings demonstrate that the assessment conceptions measured by the instrument are interpreted similarly across demographic groups, allowing for valid comparisons. The MANOVA results yielded a significant effect for gender, Wilk's Lambda=.980, $F=2.535(8, 985)$, $p=.010$, $\eta^2=.020$, but no significant effects for age, Wilk's Lambda=.989, $F=1.371(8, 985)$, $p=.205$, $\eta^2=.011$, nor for the interaction effect of gender $\times$ age, Wilk's Lambda=.991, $F=1.126(8, 985)$, $p=.343$, $\eta^2=.009$. The univariate results indicated the existence of significant, but small, gender differences, in the factors "assessment is bad", $F=10.151(1, 992)$, $p=.001$, $\eta^2=.010$, and "assessment is irrelevant", $F=14.800(1, 992)$, $p<.001$, $\eta^2=.015$. In both cases, male students expressed a higher agreement than female students with the items of both factors (Table Y), indicating a more negative view of the assessment. No significant gender differences were observed for the remaining factors ($p>.05$).

Table 18

Invariance across Gender and Age Groups for the 8-Factor Model

Model	χ^2 (df)	p	χ^2/df	RMSEA [90% CI]	Gamma hat	CFI	SRMR	AIC	BIC
Gender									
Male	686.528 (322)	<.001	2.132	.048 [.043, .053]	.950	.891	.059	31690.466	32158.396
Female	678.478 (322)	<.001	2.107	.046 [.042, .051]	.954	.890	.067	33114.757	33589.886
Configural	1364.831 (644)	<.001	2.119	.047 [.044, .051]	.908	.890	.063	64805.223	65903.663
Metric	1398.383 (672)	<.001	2.081	.047 [.043, .050]	.904	.890	.068	64797.447	65758.581

Scalar	1454.573 (700)	<.001	1.820	.047 [.043, .050]	.901	.885	.070	64797.458	65621.287
Age group									
Up to 17 years old	815.997 (322)	<.001	2.534	.046 [.042, .050]	.954	.902	.060	47553.862	48069.047
More than 17 years old	600.024 (322)	<.001	1.863	.058 [.050, .065]	.928	.826	.070	17305.676	17704.902
Configural	1416.982 (644)	<.001	2.200	.049 [.046, .053]	.901	.883	.063	64859.537	65957.977
Metric	1445.602 (672)	<.001	2.151	.048 [.045, .051]	.900	.883	.069	64846.909	65808.043
Scalar	1493.223 (700)	<.001	2.133	.048 [.044, .051]	.897	.880	.072	64836.299	65660.128

χ^2 , chi-square statistic; *df*, degree of freedom; p, P-value; RMSEA, root mean square error of approximation; CFI, comparative fit index; SRMR, standardized root mean square residual; AIC, Akaike information criterion; BIC, Bayesian Information Criterion.

CHAPTER VI

SUB - STUDY 4: IDEAS AND PERCEPTIONS OF ASSESSMENT IN PUBLIC SECONDARY

SCHOOLS OF ECUADOR: STUDENTS´ VIEWS

Chapter VI – Sub - Study 4: Ideas and Perceptions of Assessment in Public Secondary Schools of Ecuador: Students´ Views

6.1. Questionnaire applied to the Ecuadorian students from public secondary schools

The questionnaire in this sub-study included two scales with closed-ended questions. The first scale focused on ideas associated with assessment. Statements were formulated and students had to identify the extent to which they associated assessment with these ideas, using 1=not at all to 4=very much. The second scale related to perception of effectiveness, fairness, trust and influence, ranged from 1=strongly disagree to 5=strongly agree. Each question is presented, and the most frequent answers are described. This made it easier to find the main tendencies in the answers.

6.2. Findings

6.2. 1. Ideas associated with assessment

Most of the Ecuadorian students (Table 19) associated more with assessment the ideas of learning. Other ideas like grades, reflection, verification of knowledge, tests/exams, help and success and participation were also highly associated with assessment by the surveyed students. However, for Ecuadorian students fear, imposition and injustice are associated less with assessment. Conflict is the least associated idea with assessment by the respondents.

Table 19

Ideas Students Associated with Assessment

Ideas associated with assessment		
	(not at all and a little)	(fairly and very much)
	%	%
Verification of knowledge	38.70%	61.30%
Participation	47.60%	52.40%
Imposition	83.10%	16.90%
Conflict	89.00%	11.00%
Success	41.10%	58.90%
Grades	26.20%	73.80%
Tests/exams	40.50%	59.50%
Reflection	34.20%	65.80%

Learning	23.20%	76.80%
Injustice	84.20%	15.80%
Help	40.90%	59.10%
Anxiety/stress	57.40%	42.60%
Fear	70.90%	29.10%

6.2. 2. Effectiveness of assessment

Table 20 presents the perspective of the Ecuadorian students about the effectiveness of assessment. Respondents ranked higher assessment as more effective when it contributes to the deepening of learning. Students also agree and strongly agree that assessment is more effective when it encourages applying knowledge in real contexts, allowing them to improve technical or scientific skills simultaneously. Moreover, surveyed students considered tests as a method to make assessment more effective. While Ecuadorian students stated assessment done by portfolios, projects or reflections allowed the development of new learning, on contrary, they ranked portfolios, projects or reflections lower as allowing a more effective assessment. Such perspectives entail a paradox related to beliefs and experiences of assessment. Although a broader approach to assessment emerges from students' views, at the same time, tests are considered to be more effective assessment methods.

Table 20

Perspective of the Ecuadorian Students about the Effectiveness of Assessment

Assessment effectiveness			
	(disagree and strongly disagree) %	(neither agree nor disagree) %	(agree and strongly agree) %
Assessment is more effective when it encourages applying knowledge in real contexts	18.00%	21.90%	60.10%
Assessment is more effective when it allows improvement of technical or scientific skills	15.70%	24.80%	59.50%
Assessment is more effective when it contributes to the deepening of learning	15.00%	17.30%	67.70%
Assessment is more effective when it allows simultaneous improvement of technical and soft skills	15.90%	31.40%	52.70%
Portfolios, projects or reflections allow a more effective assessment	22.00%	29.80%	48.10%

Assessment done by portfolios, projects or reflections allow the development of new learning.	19.50%	23.80%	56.70%
Tests allow a more effective assessment	18.20%	26.60%	55.20%

6.2. 3. Assessment fairness

Regarding assessment fairness (Table 21), Ecuadorian students ranked higher that assessment is fairer when allowed to perform self- assessment. Additionally, respondents state that tests or examinations make assessment fairer. On the other hand, students state that assessment is fairer when it includes texts and exams, but they also identify portfolios, projects and reflections. The least % is associated with both self and peer assessment and only peer assessment.

Table 21

Fairness of Assessment

Assessment fairness			
	(disagree and strongly disagree) %	(neither agree nor disagree) %	(agree and strongly agree) %
Assessment is fairer when the students perform a self-assessment	16.50%	23.00%	60.50%
Assessment is fairer when there is self- and peer assessment	22.30%	36.70%	41.00%
Assessment is fairer when it includes tests or examinations	17.70%	28.10%	54.20%
Tests or examinations allow a fairer assessment	18.50%	28.00%	53.50%
Portfolios, projects or reflections allow a fairer assessment	20.40%	29.10%	50.50%
Assessment is fairer when there is peer assessment	23.90%	35.10%	41.00%

6.2. 4. Trust and assessment

In addition (Table 22), Ecuadorian students agree or strongly agree that they felt more confident when they were assessed by a method requiring active participation in the task. The lowest ranking concerned tests, that is, surveyed students have less trust in tests or examinations. This contradicts their views when they identify tests and exams as effective and fairer assessment methods. Such perspectives may be related to their own experiences of assessment in elementary and secondary schools where a culture of summative assessment prevails but also to contradictory messages about the process of assessing their learning.

Table 22

Trust and Assessment

Trust and assessment	(disagree and strongly disagree) %	(neither agree nor disagree) %	(agree and strongly agree) %
The students felt more confident when they are assessed by assessment methods that actively participated in the tasks	18.20%	24.70%	57.10%
The students felt more confident when they are assessed by tests or exams	20.50%	30.70%	48.80%

6.2.5. Influence and time for assessment

Also (Table 23), Ecuadorian students ranked higher that they study more when assessment is done through portfolios, projects or reflections. With a short difference of 4.00%, respondents also agree or strongly agree that they study more when assessment is done through tests and examinations. In the Ecuadorian context, students perceive they study throughout the “semester” when they make a project or portfolio. On the other hand, participants emphasized that they just study the pragmatic contents that integrate the assessment.

Table 23

Influence and Time for Assessment

Influence and time for assessment	(disagree and strongly disagree) %	(neither agree nor disagree) %	(agree and strongly agree) %
I dedicate more hours to study when the assessment is done through portfolios, projects or reflections.	19.40%	24.90%	55.70%
I dedicate more hours to study when the assessment is done through tests or examinations.	19.80%	28.40%	51.80%
I usually forget most of the subject I have studied after I take a test or examination.	32.10%	33.90%	34.00%
I usually just study the pragmatic contents which integrate the assessment.	25.70%	34.10%	40.20%
When I prepare myself for a test, I just start studying a little time before the assessment and not during the semester.	33.10%	29.20%	37.70%
When I make a project or portfolio, I study during the “quimestre”.	33.10%	30.60%	47.60%

6.3. Summary

Findings from this sub-study show that Ecuadorian students related higher assessment with ideas of learning. Simultaneously, they also opted to associate assessment with the ideas of reflection, verification of knowledge, tests/exams, and participation. In this sense, these results show that students consider assessment as an instrument to demonstrate and verify what they have learned with evidence. It is also possible to conclude that Ecuadorian students, instead of associating assessment with negative ideas like fear, imposition, injustice, conflict, and anxiety/stress, relate assessment as help to guarantee their success.

Results from this sub-study provide evidence that students feel more confident when being assessed through methods that encourage them to apply the new knowledge in real contexts. According to the students, the former does not make them consider tests as less effective. However, students asserted they trust more in an assessment in which they participate actively in the tasks, in contrast to when they are assessed through a test. Ecuadorian students highlighted that they are allowed to develop new knowledge when assessed through portfolios, projects, or reflections. Nevertheless, the assessment appears not to be more effective when these methods are applied and again, they emphasize the role of tests and examinations.

According to Ecuadorian students, assessment is fairer when there is self – assessment and tests or examinations. On the other hand, Ecuadorian students perceived the practice of peer assessment as less fair. The latter can be understood considering that in high schools the level of relationship among students may influence the development of peer assessment and make it an unfair process.

For most of the students, they have to study more when assessment is done by portfolios, projects or reflections. They stated almost the same when referencing tests and examinations. Most of the Ecuadorian students consider that assessment takes place throughout the “semester”. Furthermore, the Ecuadorian students stated they prefer to review the pragmatic content at the time of assessment. Such results entail contradictory messages about conceptions of assessment as while students acknowledge the importance of diverse methods, they highlight that tests and examinations are fairer and more effective. This is also related to the ideas associated with assessment. They recognize issues of learning and success, they tend not to value negative aspects such as conflicts, anxiety and injustice but at the same time a rather summative perspective seems to prevail. This may be related to their experience of assessment in schools and the valorization of both tests and examinations despite the recognition of the importance of self- assessment and peer assessment. These results point to the need

to discuss assessment practices in light of teaching and learning strategies in order to make the most of student participation.

CHAPTER VII

SUB - STUDY 5: PRACTICES OF ASSESSMENT AND FEEDBACK DURING ONLINE TEACHING IN THE CONTEXT OF COVID-19: EXPERIENCES OF THE ECUADORIAN TEACHERS FROM PUBLIC SECONDARY SCHOOLS

Chapter VII – Sub-Study 5: Practices of Assessment and Feedback during Online Teaching in the Context of COVID-19: Experiences of the Ecuadorian Teachers from Public Secondary Schools

This chapter presents data from an online questionnaire conducted with 229 third-year high school teachers from thirty-eight public secondary schools, particularly on the degree of importance assigned to the types of assessment (diagnostic, formative, summative); the frequency of feedback given to the students during distance assessment in contrast to face-to-face assessment; the participation of the students in self/peer evaluation during distance assessment in contrast to face-to-face assessment; the diversity of instruments for the collection of information during distance assessment in contrast to face-to-face assessment; and the recurrence of using a group of instruments during distance assessment. In addition, the results of four open-ended questions are presented on the tools and strategies that teachers recommend and do not recommend to their colleagues for online/distance teaching; the difficulties faced by teachers during distance assessment; and who they turned to overcome these difficulties.

The questions used in this sub- study aim to understand the ways in which the Ecuadorian teachers faced distance teaching and learning contexts. They were organized in a way to provide the teachers with the option to select a single response. In the first scale participants had to rate the importance attributed to each assessment method during the online context. It used a four-point Likert scale ranging from 1 = not at all important to 4 = very important. In the second, third, and fourth scale a five-point Likert scale ranging from 1 = increased a lot to 5= decreased a lot was applied. A five-point Likert scale ranging from 1 = never to 5=always was used in the fifth scale. Finally, four open-ended questions were used.

Quantitative and qualitative approaches were applied in this sub-study for data analysis.

7.1. Findings

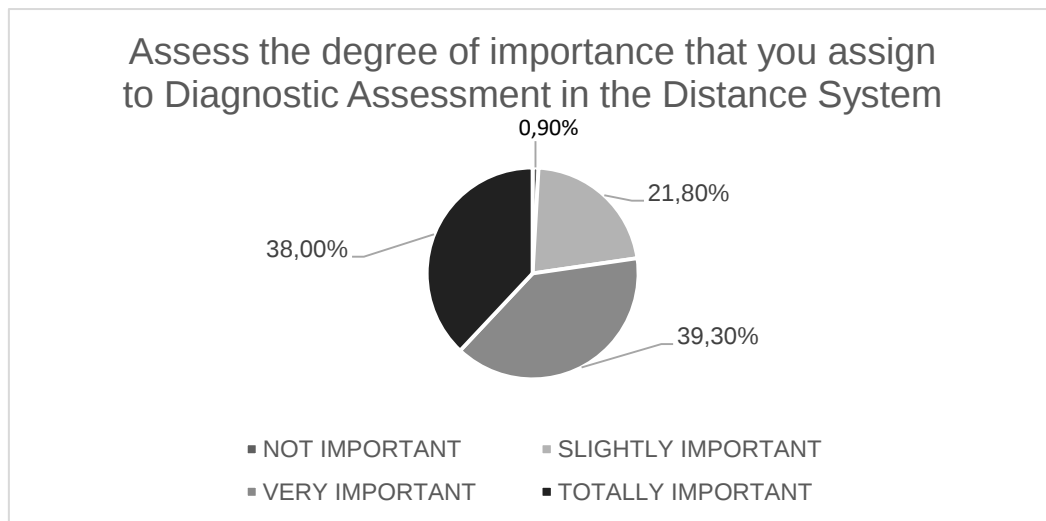
7.1.1. Assessment and feedback practices during the distance teaching

Teachers were surveyed about the level of importance they assigned to the types of assessment (diagnostic, formative and summative assessment) during distance teaching.

Figure 15 reports that 99.1% of the participants consider the use of diagnostic assessment important (only 0.9% consider it not important).

Figure 15:

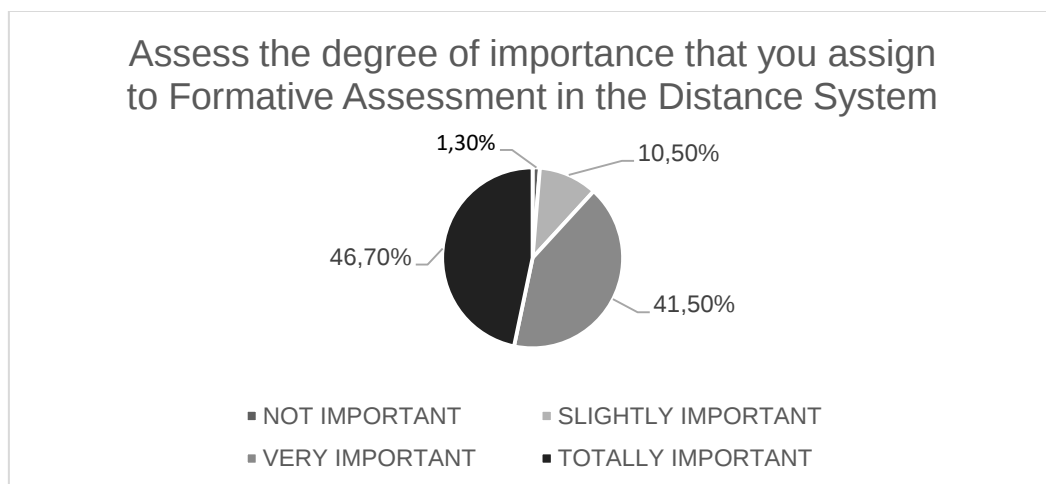
Importance of Diagnostic Assessment



As showed in figure 16 and regarding to formative assessment, 98.7% of teachers assign importance to it (only 1.3% consider it not important).

Figure 16:

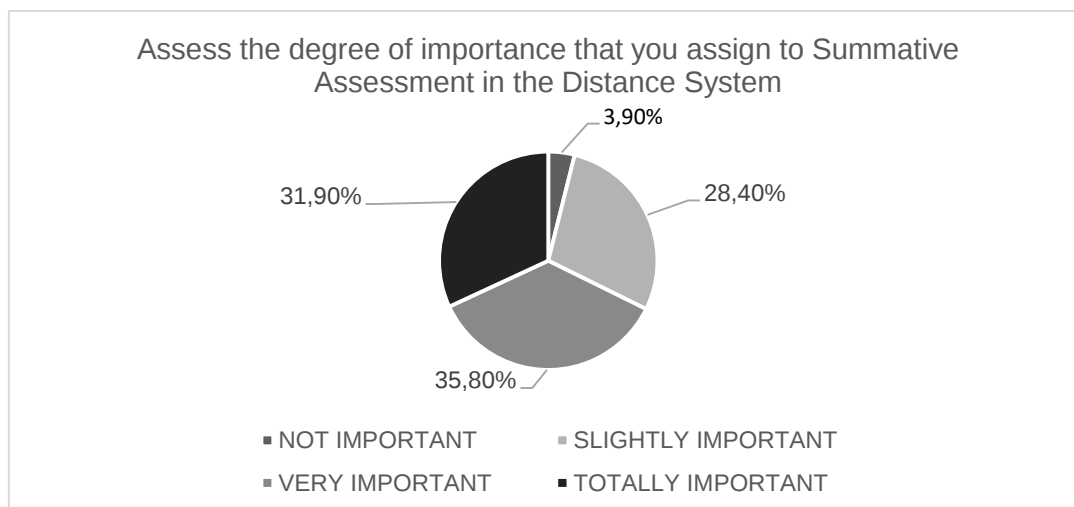
Importance of Formative Assessment



It is observed in figure 17 that for summative evaluation, 96.1% of respondents stated that it was important (only 3.9% considered it not important).

Figure 17:

Importance of Summative Assessment

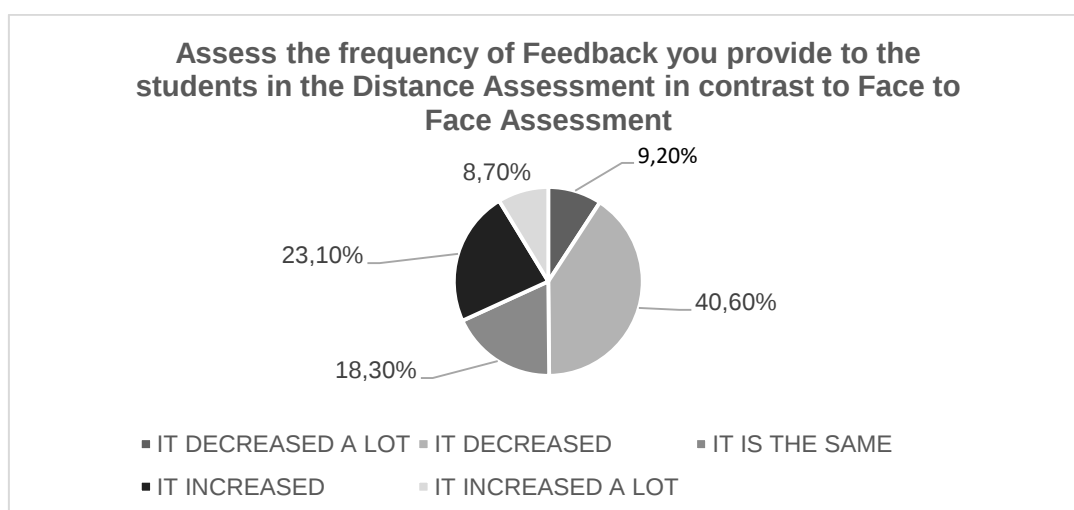


7.1.2. Feedback given to the students during distance assessment in contrast to face-to-face assessment

As it is presented in figure 18, respondents stated that the feedback given to the students during distance assessment decreased almost 50% (decreased 40.6%; decreased a lot 9.2%) in contrast to the feedback provided to their pupils during face-to-face assessment.

Figure 18:

Feedback during Distance Assessment

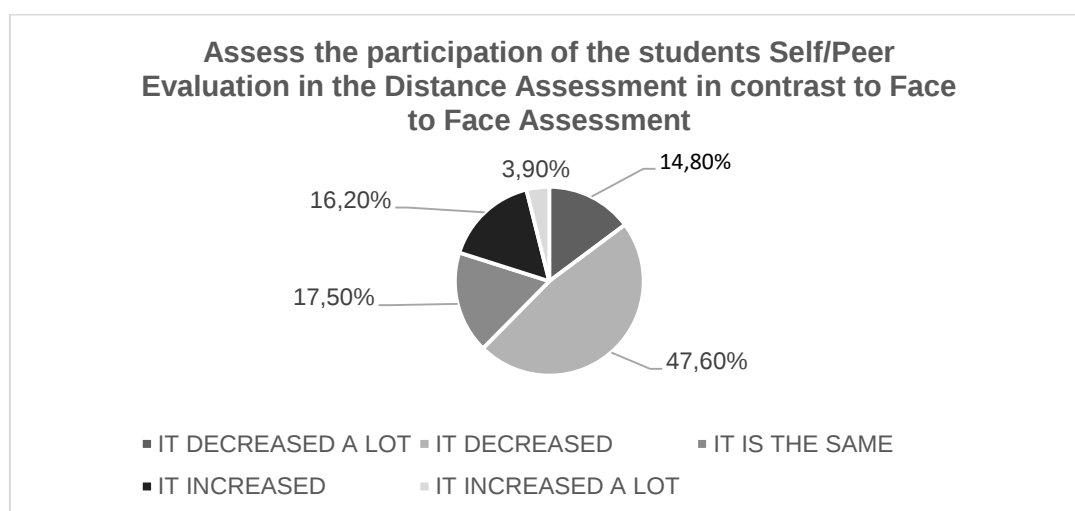


7.2.1. Participation of the students in self/peer evaluation during distance assessment in contrast to face-to-face assessment

Regarding the participation of the students in self/peer evaluation during distance assessment in contrast to face-to-face assessment, it is observed in figure 19 that 62.4% of the participants asserted that “it decreased, or it decreased a lot”. In addition, 20.1% highlighted that “it increased, or it increased a lot”; 17.5 % of the respondents attested it was the same.

Figure 19:

Students Participation in Self/Peer Evaluation during Distance Assessment

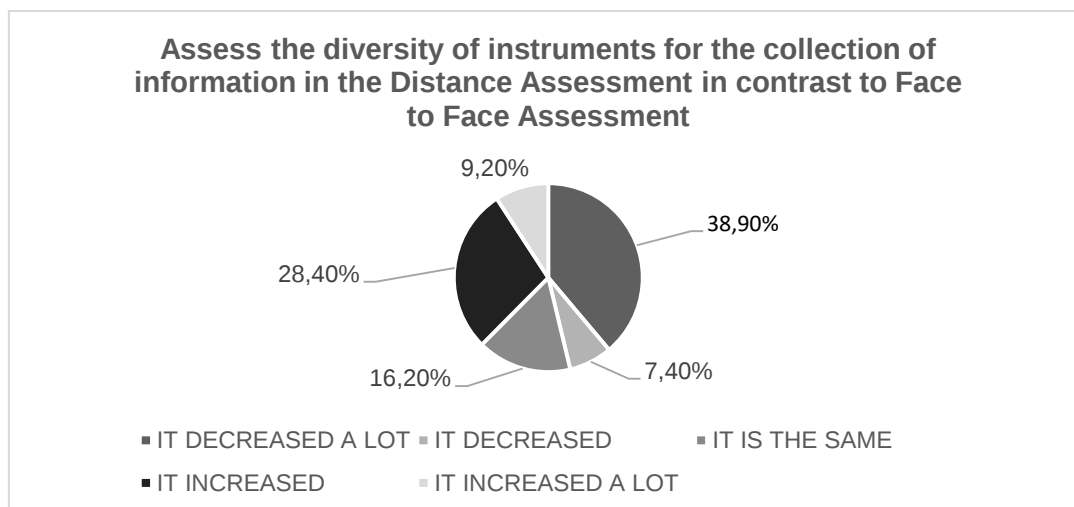


7.2.2. Diversity of instruments for the collection of information during distance assessment in contrast to face-to-face assessment

Data from figure 20 showed that according to surveyed teachers, the diversity of instruments for the collection of information during distance assessment, in contrast to face-to-face assessment decreased by 46.3% (decreased 7.4%; decreased a lot 38.9%); it is the same for 16.2%; and increased 37.6% (increased 28.4%; increased a lot 9.2%).

Figure 20:

Diversity of Instruments for the Collection of Information during Distance Assessment



7.2.3. Recurrence of using a group of instruments during distance assessment

Regarding the frequency of using a group of instruments during distance assessment by the teachers, table 24 highlighted respondents preference for portfolios (98.7%), multiple choice questionnaires (96.0%), projects (94.8%), files/worksheets (92,6%), essays or compositions (86,9%). Lower values appear in tests or exams (77.3%), group works (74.7%), and oral presentations (73.8%).

Table 24

Use of Instruments during Distance Assessment

ITEMS		%
Portfolios	7	98.
Multiple choice questionnaires	0	96.
Projects	8	94.
Files/worksheets	6	92.
Essays/compositions	9	86.
Tests/exams	3	77.
Group works	7	74.

7.2.4. Tools and strategies teachers recommend and do not recommend for distance/online teaching

Teachers were asked about the tools and strategies they would recommend and not to other colleagues to use for distance/online teaching. Findings are presented based on the following two categories that emerged from the content analysis: technological tools and pedagogical strategies/methods.

Technological tools

Regarding the technological tools, teachers agreed to recommend a great diversity of possibilities according to the experiences they faced: online platforms (Zoom, Microsoft Teams, Moodle, Google Classroom, Edmodo...). Participants acknowledged that “platform Teams, Zoom are fundamental tools for the teaching process”, and in secondary education “work is already underway with Teams which is a tool that helps a lot with the teaching work”. Additionally, participants encourage the use of “Adobe Scan, Educaplay, videos, Prezi, YouTube, forums, Google Forms, Quizizz, chats, Mentimeter, Kahoot, Genially, Canva, Socrative, PowToon, Google Drive, email. For instance, “if we talk about assessment, we can assess through Socrative, Google Forms, or other tools”. Furthermore, we can use “Genially to make a more interactive and impactful lesson like many others”.

On the other hand, respondents do not recommend the use of social networks (Facebook, Messenger, etc.) and Skype, because they don't enough knowledge to handle them”. Moreover, some teachers mention that WhatsApp “as an educational tool does not work”.

Pedagogical strategies/methods

Surveyed teachers advocated for the application of methodologies like “Flipped Classroom”; “Project Based Learning”. Participants advised other colleagues to “teach their students to create themselves as rational and investigative human beings”; “to encourage students to observe, analyze, and look for solutions on their own”; “to start from the easiest to the most complex”; “always teach topics that will be useful in everyday life”; “the constant practice in a real way on any topic”; “to know how to reach students through technology making use them through different didactic ways”; “we teachers must offer simple, precise guidance and support mechanisms, both didactic and technological to develop the tasks proposed. Teachers must propose activities that allow the diversification of approaches based on the resources students have access”; “Orientation with guides, instructions, videos and infographics”;

“the teaching- learning process must be carefully planned”; “to work according to the level of the student. Always bear in mind that the priority are the students, and it must be ensured that they obtain very good knowledge”; “the teacher must analyze the context of the educational system which each of its particularities, taking into account the emotions, the interaction of the students of the student with his/her family and the cultural situation. From this, the teacher makes the curricular adjustment”. Participants also recommended strategies for the practice of assessment: “ as teacher I recommend the use of background knowledge, critical review of exercises and tasks, supervision and corrective feedback of the student’s learning processes”; “synchronous feedback”; “to assess students continuously “; “to supervise students, follow up, and always coordinate with parents”; “self-assessment, and autonomous learning are a positive beginning for the students”; “ peer assessment and self- assessment”; “continuous interaction, questions and answers”; students “ in pairs ask each other what they are not able to ask the teacher”: “ to use gamification tools where students can see their progress and participation”; “to support students by creating activities related to the topics in order to guide them to a good development of the proposed lessons”; “teaching learning techniques and feedback of content and knowledge”; “rubrics”; “exposition and assessment in the classroom”; “questionnaire”; “essays, articles’; “review of tasks”; “assessment through project-based learning”; “periodic assessments instead of a big assessment at the end of the process”; “continuous assessment”.

Furthermore, the surveyed teachers agreed to recommend socio affective strategies: “to have a good communication with the students”; “progressive accompaniment, empathy and flexibility with the learners”; flexible schedules”; “additional supporting material”; “holistic tools”; “ludic interaction to call the attention of the students”; “continuous communication through the different virtual channels, and explain the doubts if necessary”; “teachers should be attentive of the students and parents”; “videocalls on the work’ schedules in order to know the real situation of the families”; “ if there is not internet, there is nothing. However, we the teachers could help any student with a phone call. Teachers must have empathy to become a facilitator of this learning process”; “patience and a great impetus for the teaching – learning process”; “ any strategy that helps the emotional intelligence of the students”; “taking into account the affects that students are having in this time of crisis”; “ in- home visits and strategies for in- person delivery of the textbooks”; “collaborative participation”; “ short tasks for better results”;” the passion and dedication to provide the students the help they need, including personalized support because not all of them are in the same conditions”; “educating without limits to achieve

excellence in distance teaching”; “ I recommend a lot of patience”; “ a lot of empathy for the new generation”.

On the other hand, there are strategies /methods that respondents do not recommend for distance/online teaching “ to use traditional teaching where the teacher is the only person who speaks and there is no participation of the learners”; to avoid “the teacher being the only one in control the topic during the teaching; “not too much theory, more practice encouraging the participation of the students”; “overloading the students with work”; “ to send complex tasks without explanations”. Teachers should also consider “not to send long videos”; and not to provide students “synchronous sessions for more than one hour and a half”; as well as to avoid “invading students’ privacy in digital environments”; and “requiring students to turn on their cameras”. Furthermore, “what I recommend is the teacher should not trust 100% in what students say. Teachers must constantly monitor the students”; and not apply “group works”.

Regarding assessment, the participants said it is not a good idea “to wait a long period of time between assessment and assessment”; “to assess the knowledge through activities of memorization”; “written assessment”; “assessment with closed questions”.

7.2.5. The difficulties faced by teachers during distance/online assessment

The questionnaire applied to the teachers had a question about the difficulties they faced during the distance/online assessment. In this context, being assessment a component of curriculum field, it was defined the category “difficulties of curriculum field”. Findings are presented through the following sub- categories; a) technological resources and materials; b) nature (validity) of assessment; and c) role of the students.

Technological resources and materials

Teachers asserted that technological resources and materials make difficult distance /online assessment because “students don’t have technological resources”; “ technology is not always reliable, because it depends where the students live”; “ the internet is limited”; “ the internet is slow”; “the sudden failure of the internet interrupted the concentration on the development of the orientations and the oral assessment”; “ not all the students have internet connection”; “in our case, since we are in a rural zone with a high deficit of connectivity, as well as the economic situation of the families which prevents them from acquiring internet service”

Nature (validity) of assessment

Regarding the nature of the assessment, respondents identified challenges at the time “to interpretate assessment instruments”; “it is not the same in the distance modality”; “there is not a complete assessment”; and as a result “it is not possible to get an exact diagnostic”. “Sometimes there is no evidence of the learning of the students”; “ there is not an accurate assessment that make us (the teachers) to identify the interest and learning of the students”; “ there is a lack of assessment and feedback”; “ the word feedback was the challenge”; “it is not possible to do an effective self-assessment”; because “assessment itself has not been done, only the portfolio and daily formative activities through the digital tools”. “To assess as we are doing in the public system is a little complex”. Furthermore, it was a challenge for the teacher to determine “the reliability of the results”; because “it is unreliable”, “the fact that we (the teachers) can´t see the students face to face and we don´t know who is behind the cameras. We don´t know if the answers come from the students”.

Role of the students

Regarding the students´ participation, surveyed teachers reported a great diversity of challenges to manage assessment during distance/online teaching: “lack of connection of the students”; “lack of interest of the learners”; “little collaboration”; “there is not enough participation of the students”; “students turn on their devices, log on and teachers check that they are not paying attention”; “students do not correctly accomplish their activities”; “students often do not do their homework completely, (as a result of) their lack of interest in reading each activity carefully”. Furthermore, there is “little preparation of the students”; “few answers based on knowledge, there is not research work”; “(students´) lack of interest in the learning process”.

Who teachers turned to overcome the difficulties?

In order to solve the difficulties they faced, the teachers´ accounts showed that they opted to ask for help/support to the authorities, colleagues, department of student counseling (DECE), ITC teacher/department, parents , and students: “I just looked for other mechanisms”; “ I opted for self – preparation”; “ I tried to adapt myself for other alternatives”; “ I turned to the use of social networks or internet applications to solve this drawback to some extent”; “internet searches and workshops”; “about how to improve the participation of the students”; “ I had to learn on my own what I didn´t know”; “I have always looked for ways to solve my problems”;. Teachers´ accounts highlighted that “as teachers, we have worked together to support each other”. Teachers also shared their problems “with

colleagues who knew a little more about technologies”; “sometimes with the ITC teacher”; “ITC experts”; or “a colleague”; “a colleague with more years of experience”. Additionally, when teachers had “some doubts they turned to the sub-director who is in charge of the academic part”; “to the authorities”. “The authorities always were ready to support us (the teachers) in any inconvenience faced”; “and the respective follow up of the DECE”; “asking the parents to continue supporting their children in the developing of the tasks”. Moreover, “I asked one student to share with his partners the process he learned successfully”

7.3. Summary

The voices of Ecuadorian public secondary school teachers showed that they adapted their assessment and feedback practices to the challenges of distance teaching during the wave of COVID-19 pandemic. In this sense, diagnostic, formative, and summative assessments were considered essential by the participants. Teachers ranked with a high percentage the importance of the three types of assessment. On the other hand, respondents asserted there was a reduction in the delivery of feedback in contrast with the face-to-face modality. Furthermore, students’ participation in self and peer assessment decreased. Even though the surveyed teachers noted a decline in the diversity of assessment instruments, portfolios, multiple-choice questionnaires, and projects remained popular during distance/online assessment. Teachers’ accounts from the open-ended questions highlighted the use of technological tools that are beneficial for the work of the teachers because they promote active participation and interaction. However, participants did not recommend the use of social networks like Facebook, WhatsApp, and Skype because they consider them less effective for educational purposes. The participants’ speeches pointed to the recommendation of a wide variety of pedagogical strategies that allowed them to make the teaching learning process a meaningful experience for the whole educational community. The surveyed teachers highlighted the latter should be complemented with socio-emotional approaches emphasizing empathy, flexibility, and family engagement. Also, respondents stressed it is necessary to avoid the practice of traditional pedagogical strategies where the students are not at the core of the teaching process and assessment is mostly summative.

Regarding how the teachers faced the difficulties during distance/online assessment, it was highlighted that there were concerned about the limited technological resources, unreliable internet connectivity, and challenges in ensuring valid and reliable assessments in the online modality. Additionally, participants stated they had issues like students’ lack of interest, inadequate participation, and insufficient preparation further compounded these challenges. However, respondents stressed they found a way to overcome these obstacles through self-learning and adaptation to the context, but also

with the support of their colleagues, ITC departments, school authorities, families, and students. Collaboration and sharing knowledge among peers emerged as important strategies to address technological and pedagogical barriers. Despite the difficulties, the findings reveal teachers' resilience and adaptability in driving the complexities of distance/online education, with a determined focus on student-centered and context-responsive approaches to teaching and assessment.

CHAPTER VIII

SUB - STUDY 6: PERSPECTIVES OF ASSESSMENT AND FEEDBACK DURING ONLINE LEARNING IN THE CONTEXT OF COVID-19: THE VIEWS OF THE ECUADORIAN STUDENTS FROM PUBLIC SECONDARY SCHOOLS

Chapter VIII –Sub -Study 6: Perspectives of Assessment and Feedback during Online Learning in the Context of COVID-19: Views of the Ecuadorian Students from Public Secondary Schools

8.1. Questionnaire applied to the Ecuadorian teachers from public secondary schools

This sub- study presents data collected in Ecuador in the scholar year 2020-2021 during the wave of COVID -19 with the aim to investigating student perceptions about assessment (implementation and effectiveness) and feedback (implementation, type and frequency), specially the ways they are put into practice during the online context. The questions used in sub-study 6 were organized by rating scales that allowed the students from the third year of “bachillerato” to choose a single response. In the first and second scale a five-point Likert was used, ranging from 1= strongly disagree to 5= strongly agree. Finally, two open-ended items were used.

Findings are presented according to the following structure (Cf. table 25).

Table 25

Structure of the Questionnaire Used with Students in Sub-study 6

I – DEMOGRAPHIC CHARACTERISTICS			
Gender and age			
II – SCALES			
	Scale identification	Number of items	Authors
1st Scale	Perspectives of online assessment	12	(Source: Pereira,2016)
2nd Scale	Feedback online	6	(Source: Author)
II – OPEN – ENDED QUESTIONS			
1st question	Type of feedback received during the online context	-	(Source: Author)
2nd question	Frequency of feedback received	-	(Source: Author)

8.2. Findings

8.2.1. Perspectives of online assessment

Regarding Ecuadorian students’ perspectives about online/distance assessment, findings are presented according to the themes of a) implementation; and b) validity/effectiveness of assessment.

Implementation of assessment

Regarding the perspectives about the implementation of assessment during the scholar year 2020-2021 (Table 26), Ecuadorian students from the third year of “bachillerato” perceived the assessment process was conducted during the whole scholar year 2020-2021, at the end of the first quimestre and including every time they completed a task/activity. Furthermore, students from Ecuador agreed or strongly agreed that they were asked to do self-assessment in the first quimestre. Lastly, respondents asserted that most of the assessment was done by distance version.

Table 26

Implementation of Assessment

	(disagree and strongly disagree %)	(neither agree nor disagree %)	(agree and strongly agree %)
Assessment was done during the whole first quimestre from the scholar year 2020-2021	21.80%	31.00%	47.00%
Assessment was done just at the end of the first quimestre from the scholar year 2020-2021	32.00%	33.10%	36.70%
Assessment took place at every time when I completed a task/activity of the first quimestre from the scholar year 2020-2021	22.50%	31.30%	46.10%
I was asked to do self-assessment in the first quimestre from the scholar year 2020-2021	23.80%	25.90%	50.30%
Assessment was done by face-to-face version	58.60%	21.20%	20.20%
Assessment was done by distance version	21.20%	21.80%	56.90%

Validity/effectiveness of assessment

From a perspective (Table 27), Ecuadorian students agreed and strongly agreed that they felt satisfied and comfortable with distance/online assessment. On the other hand, students scored higher on the fairness of assessment when it is conducted online than when it is face-to-face. However, surveyed students perceived distance/online assessment is not more effective than face-to-face assessment but easier. According to the respondents, the latter makes distance/online assessment more susceptible to cheating.

Table 27

Validity/Effectiveness of Assessment

	(disagree and strongly disagree %)	(neither agree nor disagree %)	(agree and strongly agree %)
I feel satisfied with the Distance Assessment	27.30%	26.10%	51.70%
Teachers feel comfortable with the Distance Assessment	25.00%	37.80%	37.20%
Distance Assessment is fairer than the Face-to-Face Assessment	36.20%	32.70%	31.10%
Distance Assessment is more effective than the Face-to-Face Assessment	35.40%	33.30%	31.30%
Distance Assessment is more difficult than the face-to-face assessment	36.60%	33.20%	30.20%
Distance Assessment is more susceptible to cheating than the face-to-face assessment	33.20%	30.80%	36.00%

8.2.2. Perspectives of online feedback**Implementation of feedback**

In regard to the implementation of feedback during the learning process online, Ecuadorian students agreed and strongly agreed they received feedback from their teachers, including every time they completed a task and during the whole learning process, contrary to the feedback they used to receive during the face -to -face learning. Moreover, respondents highlighted that teachers were more available during the learning at home to provide feedback to them when it was asked. Additionally, respondents stated agreement to point out that most of the feedback was received by synchronous sessions and throughout platforms/WhatsApp/e-mails (Cf. Table 28).

Table 28

Implementation of Feedback

	(disagree and strongly disagree %)	(neither agree nor disagree %)	(agree and strongly agree %)
During the learning at home I received feedback from my teachers about my tasks	28.70%	22.30%	49.00%
During the learning at home I received more feedback from my teachers every time I completed a task contrary to the time I received in the face-to-face learning	29.20%	30.40%	40.40%
During the learning at home I received more feedback from my teachers during the whole process to improve my learning contrary to the time I received in the face-to-face learning.	28.40%	30.70%	40.90%
During the learning at home the teachers were more available to provide me feedback when I asked for it contrary to the availability they have in the face-to-face learning	28.70%	29.80%	41.50%
During the learning at home I received feedback during the synchronous sessions	27.10%	38.80%	39.00%
During the learning at home I received feedback by platforms/WhatsApp/e-mails	20.40%	19.90%	59.70%

8.2.3. Type of feedback received during the online context

Participants' accounts about the feedback received during the online context were organized to present them in a descriptive way. Valid answers (n=267) were structured according to the following criteria a) synchronous 41.60%; b) asynchronous 58.40%. A large number of participants (n=729) refused, didn't know, or did not have an answer to the question (Cf. Table 29).

Table 29

Type of Feedback Received during the Online Context

	(Synchronous)	(Asynchronous)
What type of feedback did you receive?	41.60%	58.40%

8.2.4. Frequency of feedback received

Participants' accounts about the frequency of feedback received during the online context were organized to present them descriptively. Valid answers (n= 430) were structured according to following criteria a) all-time 58.80%; b) occasionally 28.10%; and c) never 13.00%. A considerable number of the surveyed participants (n= 566) refused, didn't know, or did not have an answer to the question (Cf. Table 30).

Table 30

Frequency Feedback Received during the Online Context

	(All time %)	(Occasionally %)	(Never %)
When did you receive feedback?	58.80%	28.10%	13.00%

8.3. Summary

As in many countries worldwide, the necessity to mitigate the dissemination of the virus COVID -19 made the Ministry of Education from Ecuador closed schools in March 2020. In this sense, remote/online teaching was adopted, and teachers and students had to adapt themselves to the "new normal".

In this sub-study the perspectives of assessment and feedback from the Ecuadorian students from the third year of "bachillerato" during the scholar year 2020-2021 are presented. According to the respondents, assessment was consistently applied throughout the whole scholar year at the end of each

“quimestre”, and after completing a task/activity. The practice of self-assessment is also highlighted by the students. On the one hand, respondents expressed satisfaction with the fairness and accessibility of online assessments, however, the effectiveness of distance/online assessment in contrast to face-to-face assessment is questioned because it appears to be simpler but also more prone to cheating. The students surveyed perceived that they received feedback more frequently during the online modality compared to face-to-face contexts. Including, they highlighted there was an increase in the availability of teachers to provide feedback. Feedback was mainly delivered through Learning management Systems (LMS) platforms, WhatsApp, and email. Students' accounts indicated that most feedback was constant but also constant asynchronous.

CONCLUSIONS AND IMPLICATIONS

Conclusions and implications

In this section, the main conclusions and implications of this research are presented considering the reflection and the discussion of the findings as well as the theoretical framework.

This research intended to respond to the research questions and the goals presented at the beginning of this study. It aimed at examining the assessment process in secondary education, as well as issues related to teaching and learning process through the perceptions of teachers (and directors and sub- directors, who are also, in the first instance, teachers) and students from secondary public schools. The study has also sought to contribute to improving the quality of teaching, learning and assessment processes in secondary education.

A mixed method approach was applied in a study for 38 secondary public schools from Ecuador. The mixed-method approach that guided this study is a combination of diverse methods and techniques, stages for the collection of data and sources (Flores, 2003; Fernandes, 2020).

First, from a review on assessment, this study found that recent research focuses on assessment practices other than the written test or exams, in accordance with a learner-centered assessment (for example, Pinheiro, 2022). The use and effects of a diversity of assessment methods into the educational settings have been investigated, particularly those pointing to the so-called alternative methods (Sanusi, Zulkifli & Hamzah, 2025; Meier & Knoester, 2017; Janisch, Liu, & Akrofi, 2007).

The perceptions of teachers, directors and sub- directors and students, as key participants in the educational process, have allowed us to get to know the aspects associated with the assessment process and its implications for learning and teaching in the public education system. It is possible to conclude that the assessment process in secondary education is influenced by different external and internal factors. I will explore the main findings and their implications next.

Teachers' Conceptions of Assessment

Firstly, this research has sought to explore Ecuadorian secondary teachers and students' conceptions of assessment.

In sub- study 1, which intended to get to know the conceptions of assessment of Ecuadorian teachers from secondary public Education, respondents agreed most strongly with the view that assessment is used to promote learning. This is promising but further work needs to be done to enhance measures in this context.

Results from confirmatory factor analysis indicate that the intention to replicate the original model used in previous studies was unsuccessful. A non-hierarchical alternative model with four simple, first-order factors: *Improvement*, *Irrelevance*, *School Accountability*, and *Student Accountability* was delineated. Factor inter-correlations revealed significant relationships among factors. Improvement and irrelevance denoted the highest relationship. Additional strong relations were observed with students' and schools' accountability; between irrelevance and schools' accountability; and between improvement and students' accountability. Moderate correlation was observed between improvement and schools' accountability and the lowest, but still large, observed correlation was between students' accountability and irrelevance. How secondary teachers conceive the purposes and nature of assessment is pivotal since teachers become active participants when designing, administering, and interpreting student assessments in the subjects they teach.

This research has been found that the original statistical model for the Teacher Conceptions of Assessment inventory resulted in inadmissible parameters. Since "it is possible that a statistical model of teacher conceptions of assessment will always be a local expression" (Brown et al., 2019, p.1), a revised 22 items model that was ecologically in line with Ecuadorian's high-stakes public assessment system showed that four different purposes for assessment could be identified (i.e., assessment is for improvement, assessment is irrelevant, assessment is for school accountability, and assessment is for student accountability).

It could be deduced that the high correlation between improvement and irrelevance indicates that secondary teachers assume that using assessment for those purposes reflects the way assessment should be applied (improvement) and the actual purpose for which is currently used (irrelevance). The conception of the irrelevance of assessment represents participants who conceive assessment as not linked to the work of teachers and students (Brown, 2004). Moreover, these differences usually reflect the impact of the ecological context (e.g., Brown & Michaelides, 2011; Brown et al., 2019).

The correlation between students' and schools' accountability was also high and a moderate correlation between students' accountability and irrelevance was presented. The latter may suggest that the current assessment practices of these teachers are still rooted in the assessment purposes that dominate the assessment system nowadays (the purposes of school and student accountability). According to Brown, Hui, Flora & Kennedy (2011, p.316), "While teachers are meant to be professional agents capable of making changes within educational processes, strong accountability pressures from the system and society in general are likely to reduce the possibility of belief and practice changes". Moreover, "changing classroom assessment practices is not simply a matter of increasing teachers'

assessment literacy through professional development workshops, but a more comprehensive process that requires a conceptual shift for all stakeholders” (Tierney, 2007, p. 259).

Directors and Sub-directors’ Perceptions of Assessment

Regarding sub -study 2, which intended to get to know the perceptions of secondary school directors and sub-directors (who are also, in the first instance, teachers) about teaching, learning and assessment in Ecuador through semi structured interviews, it was found that, the process of assessment represents a key role when the pedagogical process is developed. Moreover, directors and sub- directors highlight the relevance of assessment practices which appear continuous and formative because they make possible the provision of effective and concurrent feedback and support for the knowledge acquisition of the learner. According to Black and Wiliam (2018), assessment supports learning when learners receive feedback that takes learning forward. Also, “To be self-regulated learners within a school context, students often need to utilize feedback obtained from educational assessments” (Brown and Harris, 2012, p.46). However, the findings indicate that teachers’ efforts to diversify assessment methods are often constrained by rigid Ministry of Education guidelines, not enough resources, scarce parental involvement, and a lack of teacher professional development in innovative assessment strategies.

The directors and sub- directors also indicated that despite the difficulties faced in the secondary educational system, they appeal for the use of traditional and alternative assessment methods in their classrooms. In this sense, a change in the practices of assessment was recognized. Directors and sub- directors identified the prevalence of a summative assessment culture supported by traditional instruments such as tests and exams. A contradiction exists between directors and sub-directors’ perceptions of assessment and the assessment methods they apply. In other words, secondary teachers do not implement certain methods and practices of assessment that they think are better for students. Some reasons for this were identified, for example, lack of support and institutional constraints. “As Pereira (2016) argues, “assessment has effects on the students’ participation and motivation and on their regulation of the learning process” (p.231).

This research found that secondary public education students’ participation in the assessment process is mainly passive. If assessment practices are associated mostly with learning certification, students may develop a more passive role in their learning process (Remesal, 2009).

Students' Conceptions of Assessment

Sub- study 3 was intended to get to know the conceptions of assessment of Ecuadorian students from secondary public education. In this study different patterns of students' conceptions of classroom assessment were identified in questionnaire responses from secondary education students. In fact, "Student conceptions about assessment may be positive or negative, exemplify various beliefs and expectations, and are hypothesized to relate to student outcomes, for example, grades" (Michaelides and Solomonidou, 2016, p.1).

Results of confirmatory factor analysis present strong positive correlations between the perception that assessment benefits the class environment and the belief that assessment is enjoyable, as well as between the perception that assessment is enjoyable and the belief that it improves teachers' instruction. In addition, it also showed an association between the perception that assessment predicts the student's future and the belief that assessment makes students accountable, also between the perception that assessment improves students' learning and the belief that assessment improves teachers' instruction. In contrast, notable negative correlations were found between the view that assessment is irrelevant and its role in predicting the student's future, as well as between the belief that assessment is bad and the perception that it improves teachers' instruction, and between the belief that assessment is irrelevant and the perception that it is enjoyable. These results suggest that positive conceptions of assessment tend to cluster together, while negative views appear to be more independent or inversely associated with functional conceptions of assessment. Moreover, "strong positive correlations between the improvement, affect/social, and external conceptions indicate that students may hold these diverse beliefs about the purposes of assessment simultaneously" (Michaelides and Solomonidou, 2016, p.6).

Students who highly perceived assessment as supporting improvement of teaching and learning have improvement assessment conceptions. These learners use assessment results to determine their educational progress and to assume responsibility for their future learning stages. This type of learners believe that assessment works not only to motivate learning, but also to create a suitable environment for learning. Therefore, they may find assessment as an enjoyable experience. From Brown and Hirschfeld (2008) findings, students who perceive classroom assessment as improvement of teaching and learning had increased academic accomplishment. These students have the time to reflect on their knowledge acquisition and use assessment outcomes to monitor and enhance their own learning (Brown & Hirschfeld, 2008; Peterson & Irving, 2008; Stralberg, 2006; Struyven et al., 2005). Moreover,

students also believe that assessment is a measure of their future and a predictor of their academic capabilities.

On the other hand, as the above conceptions were inversed related to the negative belief about assessment, it is suggested that students with negative assessment conceptions do not view assessment as an enjoyable activity; rather they view assessment as a complex activity.

This research found that secondary students held more positive beliefs about assessment for improvement, as an external accountability mechanism and as an affective and social activity. Furthermore, they were negatively endorsed to the statements about assessment as a bad, or irrelevant practice. Beliefs may be influenced by the experiences students had of various assessments, how they were applied, and their consequences (Segers & Dochy, 2001). Learners transitioning from a more formative approach to assessment [with a flexible and contextualized curriculum] in contrast with the experience of higher educational level with formal semester grades directly associated to tests, may progressively agree less with improvement and other positive conceptions of assessment as they age through the educational setting (Michaelides and Solomonidou, 2016). As “the external pressures on higher education may cause assessment to assume a primarily summative function” (Pinheiro, Flores and Madalińska-Michalak, 2016, p. 56), and the participants from this study were those attending the last year of secondary education in Ecuador, it is suggested their conceptions of assessment might change overtime.

Ideas associated with assessment and the most used assessment methods

Sub-study 4 was implemented to identify the most associated ideas with assessment from the point of view of Ecuadorian students and to get to know the most used assessment methods in secondary public education of Ecuador.

Ecuadorian students link assessment with ideas of learning, reflection, verification of knowledge, tests/exams, and participation. In this research it is suggested that students from secondary schools in Ecuador consider assessment as an instrument to demonstrate and verify what they have learned with evidence. So, the findings make us to conclude that the negative ideas linked to assessment (fear, imposition, injustice, conflict, and anxiety/stress) are not associated in the perspective of Ecuadorian students' views. On the contrary, they feel assessment is a supportive device that guarantee their success. According to Driscoll and Wood (2007, p. 12), “students who feel confident about their learning are the most successful”. However, and in line with Pereira (2016), “this

finding shows that the traditional assessment remains rooted and strong in educational systems” (p.244).

This research also found that secondary students perceive assessment as effective when it is linked to contextualized practices that make them show the new knowledge. However, students emphasize the relevance of tests as the most effective method of assessment. Based on the arguments of the last year schools students who are expected after finished their studies to decide continuing their academic preparation or choosing to work, it is suggested that in addition to the impact that assessment has on teaching and learning, it also impacts the future life of the students, because through it certain kind of skills and abilities required in work- related contexts are developed and improved.

In students’ opinion, they trust more in an assessment in which they participate actively in the tasks, in contrast to when they are assessed through a test. This finding is in line with Race (1995) and Craddock and Mathias (2009) who presented similar evidence. Although the test is the assessment method most used in secondary education, Ecuadorian students acknowledged that portfolios, projects, or reflections are also used. As presented by Sambell & McDowell (1998) and Myers & Myers (2014), secondary students assert that those assessment methods allow them to develop new knowledge. However, this research found that for the Ecuadorian students the effectiveness of tests and examinations is better than those so-called alternative methods. Although Orpen (1982) highlights peer assessment provides benefits for teachers and students, this research found that for secondary education students’ self-assessment and tests or examinations are seen as fairer rather than peer assessment.

Teachers’ practices of assessment and feedback during online teaching in the context of COVID-19

Sub-study 5 was intended to understand the ways in which the Ecuadorian teachers faced distance teaching and learning contexts.

The wave of COVID-19 motivated Ecuadorian secondary teachers to drastic changes in their practices of assessment during the emergence learning context with resilience and creativity.

Ecuadorian teachers persisted considering and implementing diagnostic, formative, and summative assessments. Secondary teachers from Ecuador highlighted the relevance of promoting substantial practices of assessment, even though learner involvement in self and peer assessment decreased and a reduction in the use of alternative instruments was faced. It is suggested in this

research that because self- and peer assessment can increase teachers' workload (Panadero & Brown, 2017; Panadero et al., 2014), educators might have acted against continuing with pupils' involvement in assessment (Panadero et al., 2022). The assessment process taken should be reflectively considered in the way of a more diversity of instruments (Van de Watering et al., 2008). In this context, efforts need to be made to engage collaboratively with students, especially in the context of distance learning, strategies to promote the development of knowledge and reflection on the learning process, whether individual (ARG, 2002; Boud 1986, 1989, 1995; Light & Cox, 2003) or collaborative (Light & Cox, 2003; Savin-Baden, 2003), enhancing the regulation of learning so that it can be more socially shared.

Regarding the assessment methods used by secondary teachers in times of COVID -19, this study found that during distance teaching the use of portfolios, projects and multiple-choice questionnaires were mainly implemented. Those methods were found to be optimal for online platforms use and effective to promote students' engagement. For example, portfolios combine formative and summative purposes (Habib & Wittek, 2007) and support student knowledge acquisition through the active use of feedback (Smith & Tillema, 2003; Steen-Utheim & Hopfenbeck, 2019). However, technological and logistical limitations led to a decline in the application of a wide variety of assessment tools. Although educators from Ecuador promoted interaction using technological tools, this research found that the use of social media such as Facebook and WhatsApp should be avoided for formal assessment purposes. Teachers must be supported to reshape subject contents, change the type and weighting of assessment tasks, and embrace relevant digital tools to motivate students to learn online (Kwong, Mui & Wong, 2020). According to Flores, Barros, Gago, Fernandes, Pereira, Ferreira & Costa (2021), the latter implies a reconceptualization of the curricular and pedagogical dimensions that involve the teaching practice independently of the modality (face to face or online) in order to reorganize the curriculum, re-evaluate the learning time, create supporting procedures or pedagogical material, that will allow us to determine the causes of success or failure and, consequently, to adapt the pedagogical intervention (Flores, Machado, Alves and Vieira, 2021).

As evidenced in early research (for example, Flores, Barros, Gago, Fernandes, Pereira, Ferreira & Costa, 2021) during the pandemic teachers applied synchronous and asynchronous methods to assess the students from secondary public schools. The delivery and gathering of the assessment were through online platforms. According to Lieberman (2020), teachers generally used online platforms and systems to provide their pupils instruction remotely. From the Ecuadorian teachers' perspective, a

learner centered approach and socio emotional support need to be provided in their instructional practices.

As in line with Leech et al (2022, p.245), during the pandemic “secondary teachers more often report student engagement and a general feeling of being lost or unsupported in their teaching as challenges.” However, this research found that secondary teachers from Ecuador managed to cope with the difficulties by relying on collaboration, self-preparation, and institutional support to adapt their practices of assessment. As similarly observed by Kwong et al (2020), “peer-sharing by experienced or newly-converted teachers on their successful virtual teaching experience with others had helped fast-track teachers’ deployment of e-Tools, thereby fostering a culture of adopting e-Learning and e-Assessment to ensure continued student learning in difficult times” (p.49).

Students’ perspectives of assessment and feedback during online learning in the context of COVID-19

In sub-study 6 which intended to investigate students’ perceptions about assessment (implementation and effectiveness) and feedback (implementation, type and frequency) practice during the online context, secondary education students agreed that the assessment practices continued being a constant factor of the teaching learning process, especially when an academic term or proposed assignments were completed.

While the learners recognize that during remote instruction assessments seem accessible and fair, concerns about their simplicity and the potential permeability for cheating are identified. Literature points out that cheating and lack of effort contaminate grades (Murdock et al., 2016; Wise and Smith, 2016 as cited in Brown, 2017). So, in line with Meccawy et al (2021), it is suggested in this research the necessity of a multilevel approach to the concerns about cheating and plagiarism. However, the latter depends on learners putting all their efforts throughout an assessment activity, with no cheating (Dorans, 2012 as cited in Brown, 2017). Moreover, implementing online teaching and learning platforms involves adequate preparation, training, and resources (Lim, 2020). In this sense, this study found that the learners’ perceptions about the effectiveness of online assessment in contrast with face-to-face assessment are changing. The delivery of feedback increased in secondary school during distance learning (Panadero et al., 2022). In the views of the secondary students from Ecuador a similar fashion was found. In other words, it was more recurrent and available compared to face-to-face settings. It is acknowledged that assessment feedback is a critical support in the progress of quality instruction and effective learning in all educational contexts (Black & William, 1998; Carless et al.,

2011; Feys, Anseel, & Wille 2011; Price, Handley, & Millar, 2011; Tee & Ahmed, 2014). Teachers progressively opted for a variety of technological tools to provide e- feedback (Saeed, & Al Qunayeer, 2022; Alharbi, 2020; Bakla, 2020; Tseng & Yeh, 2019). In this research Ecuadorian students confirm that online feedback was usually through online learning platforms, WhatsApp, and email during the outbreak of the coronavirus pandemic.

The perceptions of students and teachers, as significant participants in the educational process, have allowed us to get to know the aspects associated with the assessment process and its implications for learning and teaching in secondary public education. External factors that are out of the control teachers restrict them from putting into practice formative assessment. Moreover, challenges are presented in the assessment process and improvements should be made in order the educators to assume their teacher role successfully. Secondary education teachers and students view formative assessment as more effective and beneficial for learning. Nevertheless, summative assessment methods are the most commonly used for pedagogical practices.

Students perceive assessment with positive ideas. Also, the assessment methods used influence students' performance on the professional future. As classroom assessment practices have significant influence on students' conceptions of assessment, teachers must develop positive assessment conceptions in pupils by including students in the assessment process, especially in the practice of self-and peer assessment as tools to monitor and assess their own learning achievement.

Implications and suggestions for further research

This study proposes recommendations for further research. It would be thought-provoking to expand the understanding of the complex and multifaceted nature of assessment in terms of methods, conceptions, purposes, and practices. This research also suggests looking at other educational institutions, national and international, to see if the teachers and students from secondary education keep the same assessment conceptions and practices. Questions that may deserve attention for future research have emerged: What is the relationship between the professional development of secondary education teachers and the use of innovative assessment practices? What is the connection between self and peer assessment practices with the academic success of students? It would be important to get answers in this regard, not just on the dimension of perceptions but empirical studies involving methods such as observation of practices.

The results of this study suggest that there is still research to be done in the field of evaluation in secondary public education. However, this research was important not only to raise new research

questions in the field of assessment but also to contribute to new knowledge in the field of secondary education. Thus, this research contributes to the improvement of assessment in secondary public education and to the quality of learning through the deconstruction of beliefs and practices of secondary schools' teachers and students.

Finally, research on assessment frequently appears, from earlier times to the present day. Although it underlines that attention should be given to the assessment process as it is a pivotal element of the educational process, more needs to be done to enhance teaching, learning and assessment in Secondary Public Education, particularly in Ecuador.

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Appendices

Appendix I. Recommendation of the Subcommittee on Ethics for Social and Human Sciences (University of Minho)



Universidade do Minho

Conselho de Ética

Comissão de Ética para a Investigação em Ciências Sociais e Humanas

Identificação do documento: CEICSH 046/2021

Relator: Manuel José Jacinto Sarmiento Pereira

Título do projeto: *Perspectivas de evaluación de los profesores y estudiantes en la educación secundaria: un estudio de método mixto en ecuador*

Equipa de Investigação: Jorge Hamilton Leal Cevallos, Doctoramiento en Ciencias de la Educacion - especialidad en Desarrollo Curricular, Instituto de Educação, Universidade do Minho; Professora Doutora Maria Assunção Flores (Orientadora), Centro de Investigação em Estudos da Criança (CIEC), Instituto de Educação, Universidade do Minho

PARECER

A Comissão de Ética para a Investigação em Ciências Sociais e Humanas (CEICSH) analisou o processo relativo ao projeto de investigação acima identificado, intitulado *Perspectivas de evaluación de los profesores y estudiantes en la educación secundaria: un estudio de método mixto en ecuador*.

Os documentos apresentados revelam que o projeto obedece aos requisitos exigidos para as boas práticas na investigação com humanos, em conformidade com as normas nacionais e internacionais que regulam a investigação em Ciências Sociais e Humanas, nomeadamente no que respeita à confidencialidade dos dados, anonimato e consentimento informado. No entanto deixa-se a ressalva de que deve ser garantido o consentimento livre e informado dos encarregados de educação de estudantes menores de 18 anos.

Face ao exposto, a Comissão de Ética para a Investigação em Ciências Sociais e Humanas (CEICSH) nada tem a opor à realização do projeto nos termos apresentados no Formulário de Identificação e Caracterização do Projeto, que se anexa, emitindo o seu parecer favorável, que foi aprovado por unanimidade pelos seus membros.

Braga, 2 de julho de 2021.

O Presidente da CEICSH

(Acílio Estanqueiro Rocha)

Anexo: Formulário de identificação e caracterização do projeto

Appendix II. Request and authorization from the Education Authority of Ecuador

Portoviejo, Noviembre 13 de 2020.

Lcdo. Leopoldo José Pico Barreiro. Mg.
Director Distrital de Educación 13D01 – Portoviejo.
En su despacho.

Licenciado Jorge Hamilton Leal Cevallos, por medio de la presente le extiendo un afectuoso saludo y a la vez éxitos en sus actividades diarias.

Señor Director, pongo en su conocimiento que como estudiante del programa de Doctoramiento en Ciencias de la Educación, perteneciente al Instituto de Educación de la Universidad de Minho, de la república de Portugal, me encuentro realizando el proceso investigativo que me servirá como requisito a fin de obtener el título académico correspondiente.

En este sentido, por haber planteado mi estudio dentro un número determinado de instituciones educativas que ofrecen el Bachillerato dentro del Distrito 13D01, solicito a usted, se me permita solicitar la colaboración de carácter voluntaria y anónima, de los docentes y estudiantes del Tercero de Bachillerato de los planteles que se encuentran en la lista adjunta, para que puedan completar una encuesta, que tiene como objetivo; **"Conocer las Concepciones y Prácticas de Evaluación de los Aprendizajes de los Profesores y Estudiantes dentro de la Educación Secundaria"**

Cabe recalcar, que la encuesta será aplicada por medio de formulario electrónico a través de link, por lo que se cumplirá con las reglas de distanciamiento social emitidas por las autoridades correspondientes, debido a la pandemia del COVID-19. Así mismo, por ser esta de carácter anónimo no requerirá de datos personales de los encuestados, lo que nos permitirá salvaguardar la privacidad de los mismos. Adicionalmente, al ser una encuesta voluntaria, podrán los participantes decidir si desean completarla o no.

Esperando que mi solicitud, tenga una acogida positiva, me despido de usted,

Muy atentamente,


Lcdo. Jorge Hamilton Leal Cevallos. Mg.Sc.
1308892882

Nota: Adjunto listado de instituciones educativas consideradas, certificado de Universidad de Minho.

Memorando Nro. MINEDUC-CZ4-13D01-2020-2743-M

Portoviejo, 17 de noviembre de 2020

PARA: Gestion en Desarrollo del Curr Jorge Hamilton Leal Cevallos

Se. Ldo. Henry Jacinto Velez Avendaño
Administrador Circunval C01

Sea. Mgs. Karlima Yanira Cedeño Casquete
Administradora Circunval Circunval C02_9

Se. Ldo. Oscar Segundo Maldonado Castillo
Administrador Circunval 13D01e04

Se. Ing. Santiago Eduardo Hernandez Clavijo
Administrador Circunval 13D01e03

Sea. Ing. Marlene Isabel Cedeño Quiroz
Administradora Circunval Circunval C05_8

Sea. Ing. Libby Maribel Delgado Vergara
Administradora Circunval C06a y C06b

Sea. Mgs. Ana Karina Llor Zambrano
Administradora Circunval C07

Se. Ldo. Marcos Antonio Paladines Castillo
Administrador Circunval Circunval C10

Sea. Mgs. Digna Teresita Peñañel Llor
Administradora Circunval C11 Y C14

Sea. Lda. Bleyxin Geomary Reyes Mena
Circunval 13

Sea. Ing. Ramona Jacqueline Alava Briones
Administrador Circunval C12a C12b

Se. Ing. Pedro Alberto Fernandez Velez
Circunval 13, Subrogante

ASUNTO: AUTORIZACIÓN PARA APLICAR ENCUESTA

Memorando Nro. MINEDUC-CZ4-13D01-2020-2743-M

Portoviejo, 17 de noviembre de 2020

De mi consideración:

En respuesta al Documento No. MINEDUC-CZ4-13D01-UDAC-2020-4888-E, me permito comunicarle a usted que esta Dirección Distrital de Educación 13D01-Portoviejo **AUTORIZA** realizar la encuesta a las Instituciones Educativas detalladas en el documento adjunto y que se brinden las facilidades necesarias para atender dicha solicitud.

Con sentimientos de distinguida consideración.

Atentamente,

Documento firmado electrónicamente

Mgs. Leopoldo José Pico Barreiro
DIRECTOR DISTRITAL 13D01 PORTOVIEJO

Referencias:
- MINEDUC-CZ4-13D01-UDAC-2020-4888-E

Anexos:
- solicitud_-_jonga_leal_cervallas.pdf

Copia:
Sra. Tlc. Olga Lilia Macías García
Jefe Apoyo Seguimiento y Regulación, Subrogante



LEOPOLDO JOSÉ
PICO BARRERO

Lenin



Appendix III. Example of the request and invitations to take the questionnaires and Informed consent

Portoviejo, Noviembre 19 de 2020.

Lcdo. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Rector de la Unidad Educativa Fiscal XXXXXXXXXXXXX
En su despacho.

Licenciado Jorge Hamilton Leal Cevallos, por medio de la presente le extiendo un afectuoso saludo y a la vez éxitos en sus actividades diarias.

Señor Rector, una vez que el Distrito 13D01- Portoviejo, mediante **Memorando Nro. MINEDUC-CZ4-13D01-2020-2743-MP** Portoviejo, con fecha **17 de noviembre de 2020**, ha autorizado mi solicitud para que los docentes y estudiantes del Tercero de Bachillerato, puedan completar una encuesta, que tiene como objetivo; **“Conocer las Concepciones y Prácticas de Evaluación de los Aprendizajes de los Profesores y Estudiantes dentro de la Educación Secundaria”**, invoco a su colaboración, para que el siguiente mensaje y el link adjunto pueda ser compartido con los estudiantes que pertenecen al **Tercero de Bachillerato** de su institución a través de los respectivos medios electrónicos, tales como, e- mails, grupos de WhatsApp u otros.

“Estimada alumna, estimado alumno,

Nos gustaría invitarle a participar del proyecto de investigación **“Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación Secundaria: Un estudio de Método Mixto en Ecuador”** que tiene como objetivo conocer las concepciones y prácticas de evaluación en la Educación Secundaria, Le solicitamos llenar la encuesta que encontrará dando click en el siguiente link.” <https://forms.gle/ZQbuTMq9JuR6en4R6>

De antemano, agradezco por la ayuda prestada.

Muy atentamente,

Lcdo. Jorge Hamilton Leal Cevallos. Mg.Sc.
1308892882

Adjunto, copia de Autorización del Distrito 13D01 –Portoviejo.

Portoviejo, Noviembre 19 de 2020.

Lcdo. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Rector de la Unidad Educativa Fiscal XXXXXXXXXXXXX
En su despacho.

Licenciado Jorge Hamilton Leal Cevallos, por medio de la presente le extiendo un afectuoso saludo y a la vez éxitos en sus actividades diarias.

Señor Rector, una vez que el Distrito 13D01- Portoviejo, mediante **Memorando Nro. MINEDUC-CZ4-13D01-2020-2743-MP** Portoviejo, con fecha **17 de noviembre de 2020**, ha autorizado mi solicitud para que los docentes y estudiantes del Tercero de Bachillerato, puedan completar una encuesta, que tiene como objetivo; **“Conocer las Concepciones y Prácticas de Evaluación de los Aprendizajes de los Profesores y Estudiantes dentro de la Educación Secundaria”**, invoco a su colaboración, para que el siguiente mensaje y el link adjunto pueda ser compartido con los docentes que pertenecen al **Tercero de Bachillerato** de su institución a través de los respectivos medios electrónicos, tales como, e- mails, grupos de WhatsApp u otros.

“Estimada maestra, estimado maestro,
Nos gustaría invitarle a participar del proyecto de investigación **“Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación Secundaria: Un estudio de Método Mixto en Ecuador”** que tiene como objetivo conocer las concepciones y prácticas de evaluación en la Educación Secundaria. Su Institución ha sido considerada dentro de nuestro estudio, le solicitamos llenar la encuesta que encontrará dando click en el siguiente link.”
<https://forms.gle/A8RQ9EpUesAxHiJz9>

De antemano, agradezco por la ayuda prestada.

Muy atentamente,

Lcdo. Jorge Hamilton Leal Cevallos. Mg.Sc.
1308892882

Adjunto, copia de Autorización del Distrito 13D01 –Portoviejo.

FORMULARIO DE CONSENTIMIENTO INFORMADO

FASE 2 DE INVESTIGACIÓN – ENTREVISTAS

Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación Secundaria: Un estudio de Método Mixto en Ecuador

Declaro que acepto participar de manera libre y voluntaria en el estudio, de autoría de Jorge Hamilton Leal Cevallos (Estudiante de Doctorado del Instituto de Educación de la Universidad de Minho - Portugal), orientado por la Profesora Doctora Maria Assunção Flores (Profesora Asociada con Agregación del Instituto de Educación de la Universidad de Minho), en el ámbito del proyecto de doctoramiento en Ciencias de la Educación, especialidad en Desarrollo Curricular, titulado "Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación Secundaria: Un estudio de Método Mixto en Ecuador".

Certifico que me fueron explicados y comprendí los objetivos principales de este estudio y las cuestiones éticas de investigación. **En este sentido, entendi y acepto participar en la fase II del proyecto. Participaré en una entrevista, que explora cuestiones sobre las Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación Secundaria del Ecuador.**

Comprendo que mi participación en este estudio es voluntaria, pudiendo desistir en cualquier momento, sin que esa decisión se refleje en cualquier perjuicio para mí. He comprendido las reglas de transcripción de datos, autorizo que la entrevista en que participo sea grabada en audio (en el caso de ser presencial o por vía telemática) y que esa grabación sea guardada por un período de cinco años después de la conclusión del proyecto.

Entiendo además, que toda la información obtenida en este estudio será estrictamente confidencial y que mi identidad nunca será revelada en cualquier informe, publicación, o a cualquier persona no relacionada directamente con este estudio.

El/La participante

El investigador

FECHA:

Jorge Hamilton Leal Cevallos
Universidade de Minho
(jorgelealcev@hotmail.com-
jorgelealcev@gmail.com)
Telf: 0993576319

Appendix IV. Questionnaire – Secondary schools` teachers (Sub-Studies 1,5)

CUESTIONARIO PROFESORES

Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación Secundaria: Un estudio de Método Mixto en Ecuador

CUESTIONARIO SOBRE CONCEPCIONES DE EVALUACIÓN

El presente cuestionario forma parte del proyecto de investigación "Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación Secundaria: Un estudio de Método Mixto en Ecuador" y tiene como finalidad conocer las concepciones y prácticas de evaluación en la Educación Secundaria. Se trata de un inventario de concepciones de evaluación elaborado y aplicado en el proyecto "Assessment in Higher Education: The potential of Alternative Methods" (Flores, et al 2014). El mismo que fue adaptado del original "Teachers' Conceptions of Assessment (TCoA III)" (Brown, 2008), de la Universidad de Auckland, Nueva Zelanda, adaptado y validado en el contexto Portugués (Gonçalves, 2012). (2010). Este cuestionario integra además una parte basada en el "Questionário sobre Avaliação das Aprendizagens no Ensino Superior" Pereira (2011, 2016), Flores, Machado and Alves (2020) y Flores, Veiga Simão et al. (2020).

Su participación es voluntaria, la confidencialidad y el anonimato son salvaguardados en este estudio. Usted tiene la decisión de participar o desistir del mismo en cualquier momento, sin tener que dar ninguna explicación, lo que no resultará en sanción o consecuencia alguna.

Su colaboración es extremadamente importante, pues de ella depende el éxito de este estudio.

Agradecemos su colaboración.

CONSENTIMIENTO: CONFIRMO QUE TOMÉ CONOCIMIENTO DEL PROTOCOLO DE INVESTIGACIÓN ANTERIORMENTE DESCRITO Y QUE ACEPTO VOLUNTARIAMENTE PARTICIPAR EN EL PRESENTE ESTUDIO.

SI ☐

NO ☐

I. DATOS BIOGRÁFICOS

1. Sexo **Masculino** ☐ **Femenino** ☐

2. Seleccione la opción correspondiente a su edad

[Menos de 30] ☐

[30 - 35] ☐

[36 - 40] ☐

[41 - 45] ☐

[46 - 50] ☐

	[51 - 60]	☐
	[más de 60]	☐

3.	Categoría del Profesor	
	Docente Categoría "A"	☐
	Docente Categoría "B"	☐
	Docente Categoría "C"	☐
	Docente Categoría "E"	☐
	Docente Categoría "F"	☐
	Docente Categoría "G"	☐
	Docente Categoría "H"	☐
	Docente Categoría "I"	☐
	Docente Categoría "J"	☐
	Otro	☐
	¿Cuál?	

4.	Grado académico	
	Doctorado equivalente al título de PhD	☐
	Doctorado no equivalente al título de PhD	☐
	Maestría relacionada a la educación	☐
	Especialidad/diploma superior relacionada a la educación	☐
	Licenciatura en Educación	☐
	Título de profesor, tecnólogo, profesional de tercer nivel de otras disciplinas	☐
	Bachiller	☐
	Otro	☐
	¿Cuál?	

5.	Años de experiencia como profesor/a de secundaria	
	Entre 1 e 5 años	☐
	Entre 6 e 14 años	☐
	Entre 15 e 25 años	☐
	Mas de 25 años	☐

6.	Nivel (es) en el/los imparte clases (Escoja todos los que apliquen)	
	Basica Superior (8- / 9- /10-)	☐
	Bachillerato General Unificado (1- /2- /3-)	☐
	Bachillerato Internacional – BI	☐
	Otro	☐
	Cuál?	

7	¿Posee formación pedagógica?	
	No poseo formación pedagógica	☐
	Poseo algunas horas en cursos de corta duración en pedagogía.	☐
	Poseo 1 a 2 días de formación en Workshops, Seminarios, Webinars en Pedagogía.	☐
	Poseo un curso de Posgrado en pedagogía.	☐

II. CONCEPCIONES SOBRE EVALUACIÓN

INVENTARIO DE LAS CONCEPCIONES DE EVALUACIÓN

Por favor, responda las preguntas en base a su opinión y experiencia de evaluación de los aprendizajes en la Educación Secundaria, indicando el grado de concordancia o desacuerdo en relación a cada una de las afirmaciones que se presentan, asignándole una de las opciones de la siguiente escala:

1 – En desacuerdo totalmente; 2 – En desacuerdo; 3 – Ni de acuerdo ni en desacuerdo; 4 – De acuerdo; 5 – De acuerdo totalmente.

	1 En desacuerdo totalmente	2 En desacuerdo	3 Ni de acuerdo ni en desacuerdo	4 De acuerdo	5 De acuerdo totalmente
1. La evaluación de los aprendizajes que realizo proporciona información sobre el funcionamiento de la institución en que trabajo.	☐	☐	☐	☐	☐
2. Evaluar a los estudiantes implica ubicarlos en categorías predefinidas.	☐	☐	☐	☐	☐
3. La evaluación de los aprendizajes que realizo es una forma de determinar lo que los estudiantes han aprendido.	☐	☐	☐	☐	☐
4. La evaluación de los aprendizajes que realizo proporciona feedback/retroalimentación a los estudiantes sobre su desempeño.	☐	☐	☐	☐	☐
5. La evaluación de los aprendizajes que realizo está articulada con la enseñanza.	☐	☐	☐	☐	☐
6. Considero confiables los resultados que obtengo de la evaluación de los aprendizajes que realizo.	☐	☐	☐	☐	☐
7. La evaluación de los aprendizajes que realizo es coherente con mis creencias pedagógicas.	☐	☐	☐	☐	☐
8. Realizo las evaluaciones de los aprendizajes y hago uso de los resultados en el proceso de planificación.	☐	☐	☐	☐	☐
9. Los resultados de la evaluación de los aprendizajes deben ser tratados con cautela por causa de las inexactitudes metodológicas.	☐	☐	☐	☐	☐
10. La evaluación de los aprendizajes que realizo es un indicador de la calidad de la institución en que trabajo.	☐	☐	☐	☐	☐

11. Evaluar es asignar un determinado nivel al desempeño de los estudiantes.	☐	☐	☐	☐	☐
12. La evaluación de los aprendizajes me permite sacar conclusiones sobre la revelación de los probables aprendizajes de los estudiantes.	☐	☐	☐	☐	☐
13. La evaluación de los aprendizajes que realizo provee <i>feedback/retroalimentación a los estudiantes sobre sus necesidades de aprendizaje</i> .	☐	☐	☐	☐	☐
14. Los resultados de la evaluación de los aprendizajes que realizo permiten introducir ajustes en mis prácticas pedagógicas.	☐	☐	☐	☐	☐
15. Los resultados de la evaluación de los aprendizajes que realizo son consistentes.	☐	☐	☐	☐	☐
16. La evaluación de los aprendizajes que realizo es justa para los estudiantes.	☐	☐	☐	☐	☐
17. Los resultados de la evaluación de los aprendizajes que realizo son intrascendentes pedagógicamente.	☐	☐	☐	☐	☐
18. Debo tener en cuenta los errores y las imprecisiones en la evaluación de los aprendizajes que realizo.	☐	☐	☐	☐	☐
19. Los resultados de la evaluación de los aprendizajes deben ser los únicos factores para hacer <i>rankings</i> de las instituciones.	☐	☐	☐	☐	☐
20. La evaluación de los aprendizajes que realizo determina si los estándares de desempeño establecidos fueron alcanzados.	☐	☐	☐	☐	☐
21. La evaluación de los aprendizajes me permite sacar conclusiones acerca de la exteriorización de las probables competencias metacognitivas de los estudiantes.	☐	☐	☐	☐	☐
22. La evaluación de los aprendizajes que realizo ayuda a los estudiantes a mejorar su aprendizaje.	☐	☐	☐	☐	☐
23. La evaluación de los aprendizajes que realizo permite que diferentes estudiantes obtengan diferentes tipos de instrucción/enseñanza.	☐	☐	☐	☐	☐
24. Los resultados de la evaluación de los aprendizajes que realizo son confiables.	☐	☐	☐	☐	☐
25. La evaluación de los aprendizajes que realizo interfiere positivamente en el proceso de enseñanza.	☐	☐	☐	☐	☐
26. La evaluación de los aprendizajes que realizo tiene impacto pedagógicamente positivo.	☐	☐	☐	☐	☐
27. La evaluación de los aprendizajes que realizo es un proceso inexacto.	☐	☐	☐	☐	☐
28. ¿Indique herramientas y estrategias que recomendaría a otros maestros en el ámbito de la enseñanza a distancia?					
29. ¿Indique herramientas y estrategias que NO recomendaría a otros maestros en el ámbito de la enseñanza a distancia?					

30. Evalúe el grado de importancia que le atribuye a las siguientes modalidades de evaluación en el régimen a distancia.

Responda utilizando la siguiente escala:

1 = Ninguna importancia; 2 = Alguna importancia; 3 = Mucha importancia; 4 = Total importancia.

	1 Ninguna importancia	2 Alguna importancia	3 Mucha importancia	4 Total importancia
1. Diagnóstica	☐	☐	☐	☐
2. Formativa	☐	☐	☐	☐

3. Sumativa	☐	☐	☐	☐
-------------	--------------------------	--------------------------	--------------------------	--------------------------

31	EVALÚE LA FRECUENCIA DEL FEEDBACK/ RETROALIMENTACIÓN QUE PROPORCIONA A LOS ALUMNOS EN LA EVALUACIÓN A DISTANCIA EN COMPARACIÓN CON LA EVALUACIÓN PRESENCIAL.			
	Disminuyo mucho	☐		
	Disminuyo	☐		
	Es igual	☐		
	Aumento	☐		
	Aumento mucho	☐		

32	Evalúe la diversidad de instrumentos de recolección de información en la evaluación a distancia en comparación con la evaluación presencial.			
	Disminuyo mucho	☐		
	Disminuyo	☐		
	Es igual	☐		
	Aumento	☐		
	Aumento mucho	☐		

33. ¿Con que frecuencia recurre a los siguientes instrumentos en la evaluación a distancia?

Responda utilizando la siguiente escala:

0 – Nunca ; 1 – A veces ; 2 – Regularmente ; 3 – Muchas veces ; 4 – Siempre.

	0 No se aplica	1 Nada importante	2 Poco importante	3 Importante	4 Muy importante
1. Tests/Exámenes escritos	☐	☐	☐	☐	☐
2. Cuestionarios de selección múltiple.	☐	☐	☐	☐	☐
3. Ensayos/ composiciones	☐	☐	☐	☐	☐
4. Fichas de trabajo	☐	☐	☐	☐	☐
5. Portafolios	☐	☐	☐	☐	☐
6. Trabajos de grupo	☐	☐	☐	☐	☐
7. Trabajos de proyectos	☐	☐	☐	☐	☐
8. Exposición oral	☐	☐	☐	☐	☐
Otro(s).					

34	Evalúe la participación de los alumnos (autoevaluación y evaluación por pares) en la evaluación a distancia en comparación con la evaluación presencial:	
	Disminuyo mucho	☐
	Disminuyo	☐
	Es igual	☐
	Aumento	☐
	Aumento mucho	☐

35. ¿Qué dificultades sintió en la evaluación a distancia?

36. ¿A Quién recurrió para pasar las dificultades que sintió?

Si desea realizar algún comentario sobre los temas abordados, por favor, utilice el espacio en la parte inferior. Si desea conocer los resultados de este estudio, por favor, entre en contacto por e-mail. Muchas gracias por su colaboración! El Investigador: Jorge Hamilton Leal Cevallos, Universidad de Minho E-mail para contacto: jorgelealcev@gmail.com

Appendix V. Questionnaire – Secondary schools` students (Sub-Studies 3,4,6)

CUESTIONARIO ESTUDIANTES

Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación Secundaria: Un estudio de Método Mixto en Ecuador

CUESTIONARIO SOBRE EVALUACIÓN DE LOS APRENDIZAJES

Este cuestionario forma parte del proyecto de investigación "Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación Secundaria: Un estudio de Método Mixto en Ecuador" y tiene como finalidad conocer las concepciones y prácticas de evaluación en la Educación Secundaria. El mismo que fue adaptado del original "Students' Conceptions of Assessment (SCoA VI)" (Brown, 2008), de la Universidad de Auckland, Nueva Zelanda, adaptado y validado en el contexto brasileño por Matos (2010). Este cuestionario integra además una parte basada en el "Questionário sobre Avaliação das Aprendizagens no Ensino Superior" Pereira (2011, 2016). Flores et al. (2019), Flores, Machado and Alves (2020) y Flores and Vega Simão et al. (2020)

Su participación es voluntaria, la confidencialidad y el anonimato son salvaguardados en este estudio. Usted tiene la decisión de participar o desistir del mismo en cualquier momento, sin tener que dar ninguna explicación, lo que no resultará en sanción o consecuencia alguna.

Su colaboración es extremadamente importante, pues de ella depende el éxito de este estudio.

Agradecemos su colaboración.

CONSENTIMIENTO: CONFIRMO QUE TOMÉ CONOCIMIENTO DEL PROTOCOLO DE INVESTIGACIÓN ANTERIORMENTE DESCRITO Y QUE ACEPTO VOLUNTARIAMENTE PARTICIPAR EN EL PRESENTE ESTUDIO.

SI ☐

NO ☐

DATOS BIOGRÁFICOS

1. Sexo Masculino ☐ Feminino ☐

2. Seleccione la opción que corresponde a su edad

[15 - 17] ☐

[18 - 20] ☐

[Mas de 20] ☐

CONCEPCIONES SOBRE EVALUACIÓN

Por favor, clasifique cada una de las afirmaciones con base a su experiencia de evaluación en la Educación Secundaria, indicando el grado de concordancia o desacuerdo en relación a cada una de ellas, asignándole una de las siguientes opciones de escala:

1 – En desacuerdo totalmente; 2 – En desacuerdo; 3 – Ni de acuerdo ni en desacuerdo; 4 – De acuerdo; 5 – De acuerdo totalmente.

1	2	3	4	5
En	En	Ni de acuerdo	De acuerdo	De acuerdo
desacuerdo	desacuerdo	ni en		totalmente
totalmente		desacuerdo		

1. Yo pongo atención a mis resultados de evaluación para concentrarme en lo que puedo mejorar en el futuro.	☐	☐	☐	☐	☐
2. La evaluación ayuda a mi clase/curso a trabajar en conjunto y así los estudiantes nos ayudemos unos a otros.	☐	☐	☐	☐	☐
3. La evaluación es injusta en relación/para los alumnos.	☐	☐	☐	☐	☐
4. Los resultados de evaluación muestran que tan inteligente soy.	☐	☐	☐	☐	☐
5. La evaluación ayuda a los profesores a acompañar mi evolución.(crecimiento académico)	☐	☐	☐	☐	☐
6. La evaluación es una experiencia interesante y agradable para mí.	☐	☐	☐	☐	☐
7. Yo ignoro las informaciones de evaluación.	☐	☐	☐	☐	☐
8. La evaluación es una forma de determinar cuánto yo aprendí.	☐	☐	☐	☐	☐
9. La evaluación analiza mi progreso frente a los objetivos de aprendizaje.	☐	☐	☐	☐	☐
10. Yo utilizo la retroalimentación que recibo para mejorar mi aprendizaje.	☐	☐	☐	☐	☐
11. La evaluación proporciona información sobre cómo funcionan las escuelas/colegios/institutos/universidades.	☐	☐	☐	☐	☐
12. La evaluación me motiva a mí y a mis compañeros a ayudarnos mutuamente.	☐	☐	☐	☐	☐
13. La evaluación interfiere en mi aprendizaje.	☐	☐	☐	☐	☐
14. Yo observo lo que hice mal o de forma insuficiente para orientarme sobre lo que debería seguir aprendiendo.	☐	☐	☐	☐	☐
15. Yo uso la evaluación para asumir la responsabilidad para mis próximas etapas de aprendizaje.	☐	☐	☐	☐	☐
16. Los resultados de la evaluación predicen mi desempeño futuro.	☐	☐	☐	☐	☐
17. Nuestro clase/curso se apoya más cuando somos evaluados.	☐	☐	☐	☐	☐
18. Los profesores evalúan de forma exagerada.	☐	☐	☐	☐	☐
19. Yo uso la evaluación para identificar lo que necesito seguidamente.	☐	☐	☐	☐	☐
20. La evaluación es importante para mi carrera o empleos futuros.	☐	☐	☐	☐	☐
21. Cuando realizamos evaluaciones existe un buen clima en nuestra (o) clase/curso.	☐	☐	☐	☐	☐
22. Los resultados de evaluación no son muy exactos.	☐	☐	☐	☐	☐
23. Mis profesores utilizan la evaluación para ayudarme a mejorar.	☐	☐	☐	☐	☐
24. La evaluación mide la calidad de las escuelas/colegios/ institutos/universidades.	☐	☐	☐	☐	☐
25. Los profesores utilizan la evaluación para identificar lo que necesitan enseñar seguidamente.	☐	☐	☐	☐	☐
26. Yo no presto atención a mis resultados de aprendizaje.	☐	☐	☐	☐	☐

27. La evaluación revela si yo puedo analizar y pensar de forma crítica sobre un tema.	☐	☐	☐	☐	☐
28. Yo realmente aprecio el aprendizaje cuando soy evaluado.	☐	☐	☐	☐	☐

IDEAS ASOCIADAS A LA EVALUACIÓN

Teniendo en cuenta su experiencia como alumno (a) de Educación Secundaria, por favor, indique las ideas que asocia a la evaluación, asignándole una de las opciones de la siguiente escala:

1 – Nada; 2 – Poco; 3 – Bastante; 4 – Mucho.

	1 Nada	2 Poco	3 Bastante	4 Mucho
1. Verificación de conocimientos	☐	☐	☐	☐
2. Participación	☐	☐	☐	☐
3. Imposición	☐	☐	☐	☐
4. Conflicto	☐	☐	☐	☐
5. Suceso/Éxito	☐	☐	☐	☐
6. Notas/Calificaciones	☐	☐	☐	☐
7. Tests/Exámenes	☐	☐	☐	☐
8. Reflexión	☐	☐	☐	☐
9. Aprendizaje	☐	☐	☐	☐
10. Injusticia	☐	☐	☐	☐
11. Ayuda	☐	☐	☐	☐
12. Ansiedad/ Stress	☐	☐	☐	☐
13. Recelo/Miedo	☐	☐	☐	☐
Otro(s). ¿Cuál(es)?				

Señale el grado de concordancia o desacuerdo en relación a las siguientes afirmaciones, asigne una de las opciones de la siguiente escala:

1 – En desacuerdo totalmente; 2 – En desacuerdo; 3 – Ni de acuerdo ni en desacuerdo; 4 – De Acuerdo; 5 – De acuerdo totalmente.

	1 En desacuerdo totalmente	2 En desacuerdo	3 Ni de acuerdo ni en desacuerdo	4 De acuerdo	5 De acuerdo totalmente
1. La evaluación es más eficaz cuando me estimula a aplicar el conocimiento en contextos/situaciones reales.	☐	☐	☐	☐	☐
2. La evaluación es más eficaz cuando contribuye a la profundización de mis aprendizajes.	☐	☐	☐	☐	☐
3. La evaluación es más justa cuando incluye test o exámenes escritos.	☐	☐	☐	☐	☐
4. La evaluación es más justa cuando yo también hago mi autoevaluación.	☐	☐	☐	☐	☐
5. La evaluación es más justa cuando incluye evaluación hecha por pares/compañeros (heteroevaluación)	☐	☐	☐	☐	☐
6. La evaluación es más justa cuando existe autoevaluación o heteroevaluación.	☐	☐	☐	☐	☐

7. Dedico más horas al estudio cuando la evaluación es realizada a través de portafolios, proyectos o reflexiones.	☐	☐	☐	☐	☐
8. Los tests o exámenes escritos permiten una evaluación de los aprendizajes más eficaz.	☐	☐	☐	☐	☐
9. La evaluación hecha en base a portafolios, proyectos o reflexiones permiten el desarrollo de nuevos aprendizajes.	☐	☐	☐	☐	☐
10. Los tests o exámenes escritos permiten una evaluación de los aprendizajes más justa.	☐	☐	☐	☐	☐
11. Los portafolios, proyectos o reflexiones permiten una evaluación de los aprendizajes más justa.	☐	☐	☐	☐	☐
12. Normalmente, olvido la mayor parte de la materia que estudie después de rendir el examen/test.	☐	☐	☐	☐	☐
13. Dedico más horas al estudio cuando la evaluación es realizada a través de tests o exámenes.	☐	☐	☐	☐	☐
14. Me siento más seguro cuando soy evaluado (a) por medio de tests o exámenes.	☐	☐	☐	☐	☐
15. Me siento más seguro cuando soy evaluado (a) por medio de métodos de evaluación en los que participo activamente en la realización de tareas.	☐	☐	☐	☐	☐
16. Normalmente, solo estudio los contenidos programáticos que integran las pruebas de evaluación.	☐	☐	☐	☐	☐
17. Los portafolios, proyectos o reflexiones permiten una evaluación de los aprendizajes más eficaz.	☐	☐	☐	☐	☐
18. Cuando me preparo para un examen solo comienzo a estudiar poco tiempo antes de la realización de la prueba y no a lo largo del quimestre.	☐	☐	☐	☐	☐
19. Cuando realizo un proyecto o portafolio voy estudiando a lo largo del quimestre.	☐	☐	☐	☐	☐
20. La evaluación es más efectiva cuando simultáneamente me permite mejorar mis habilidades técnicas y blandas/soft skills (búsqueda y selección de información, trabajo en equipo, etc).	☐	☐	☐	☐	☐
21. La evaluación es más efectiva cuando simultáneamente me permite mejorar mis habilidades técnicas o científicas.	☐	☐	☐	☐	☐
22. En el primer quimestre del año lectivo 2020/2021, la evaluación de los aprendizajes fue realizada durante todo el Quimestre.	☐	☐	☐	☐	☐
23. En el primer quimestre del año lectivo 2020/2021, la evaluación de los aprendizajes solo fue realizada al final del Quimestre.	☐	☐	☐	☐	☐
24. En el primer quimestre del año lectivo 2020/2021, la evaluación de los aprendizajes ocurrió en cada momento que yo complete una tarea o actividad.	☐	☐	☐	☐	☐
25. En el primer quimestre del año lectivo 2020/2021 me fue solicitado realizar autoevaluación.	☐	☐	☐	☐	☐
26. La evaluación fue realizada de forma presencial.	☐	☐	☐	☐	☐
27. La evaluación fue realizada a distancia.	☐	☐	☐	☐	☐
28. Me siento satisfecho (a) con la evaluación a distancia.	☐	☐	☐	☐	☐
29. Mis profesores están más cómodos con la evaluación a distancia.	☐	☐	☐	☐	☐
30. La evaluación a distancia es más justa que la presencial.	☐	☐	☐	☐	☐
31. La evaluación a distancia es más eficaz que la presencial.	☐	☐	☐	☐	☐
32. La evaluación a distancia es más difícil que la presencial.	☐	☐	☐	☐	☐
33. La evaluación a distancia es más propicia al fraude de lo que es la presencial.	☐	☐	☐	☐	☐

Por favor, indique en qué medida concuerda con las siguientes afirmaciones, teniendo en cuenta su experiencia de aprendizaje en casa.

1 – En desacuerdo totalmente; 2 – En desacuerdo; 3 – Ni de acuerdo ni en desacuerdo; 4 – De Acuerdo; 5 –De acuerdo totalmente.

	1 En desacuerdo totalmente	2 En desacuerdo	3 Ni de acuerdo ni en desacuerdo	4 De acuerdo	5 De acuerdo totalmente
1. Durante el aprendizaje en casa recibí feedback / retroalimentación sobre mi trabajo/ aprendizaje por parte de los profesores.	☐	☐	☐	☐	☐
2. Durante el aprendizaje en casa, recibí, por parte de los profesores más feedback/retroalimentación cuando complete una tarea o trabajo, de lo que recibí en la enseñanza presencial.	☐	☐	☐	☐	☐
3. Durante el aprendizaje en casa, recibí, por parte de los profesores más feedback/retroalimentación a lo largo del proceso para mejorar mi aprendizaje, de lo que recibí en la enseñanza presencial.	☐	☐	☐	☐	☐
4. Mis profesores estuvieron más disponibles durante el aprendizaje en casa, para darme feedback/ retroalimentación cuando lo solicite, de lo que están en la enseñanza presencial.	☐	☐	☐	☐	☐
5. Durante el aprendizaje en casa, recibí feedback/ retroalimentación en las sesiones sincrónicas (en tiempo real)	☐	☐	☐	☐	☐
6. Durante el aprendizaje en casa, recibí feedback/retroalimentación a través de plataformas, e-mail, whatsapp, etc.	☐	☐	☐	☐	☐

¿Si recibió feedback/retroalimentación durante este periodo de aprendizaje a distancia, indique que tipo de feedback recibió?

¿En qué momento lo recibió?

Si desea realizar algún comentario sobre los temas abordados, por favor, utilice el espacio en la parte inferior. Si desea conocer los resultados de este estudio, por favor, entre en contacto por e-mail. ¡Muy agradecido por su colaboración! El investigador: Jorge Hamilton Leal Cavallos (Universidade do Minho); Email para contacto: jorgelealcev@gmail.com

Appendix VI. Questionnaire – Secondary schools` Directors and Sub- directors (Sub-Study 2)

ENTREVISTAS INFORMANTES CLAVES

Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación Secundaria: Un estudio de Método Mixto en Ecuador

CONTEXTO DE LA ENTREVISTA: Proyecto de doctoramiento titulado "Perspectivas de evaluación de los Profesores y Estudiantes en la Educación Secundaria: Un estudio de Método Mixto en Ecuador", con el objetivo de identificar, analizar y comprender las concepciones y prácticas de evaluación de los aprendizajes de los profesores y estudiantes de Educación Secundaria de los colegios públicos del Ecuador.

I. DATOS BIOGRÁFICOS

1. 1	Sexo	Masculino		Femenino	
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1. 2	Edad:	
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1. 3	¿Cuál es el grado académico más alto que posee? (licenciatura en educación, título de tercer nivel no relacionado a la educación, especialización, maestría, doctorado)

1. 4	¿Cuántos años de experiencia docente posee?

1. 5	¿Cuál es su tiempo de experiencia en la institución actual?

1. 6	¿Cuál es el área curricular a la que usted pertenece?

1. 7	¿Qué materia (s) imparte?

1. 8	¿A qué grado (s) curso (s) imparte clases?

1.9	¿ Qué categoría docente posee? (A, B, C, D, E, F, G, H,I, J)

1. 10	¿ Posse usted otros cargos o funciones dentro de la institución?

II. CONCEPCIONES DE EVALUACIÓN DE LOS APRENDIZAJES

2.1	Tomando en cuenta su experiencia como docente y jefe de la Comisión Técnica Pedagógica/ Junta Académica, ¿cuáles son los métodos de evaluación más utilizados en la educación secundaria?

2.2	¿ Participan los estudiantes dentro del proceso de evaluacion de los aprendizajes? ¿Si es si, Por qué? ¿ En qué momento (s)? ¿De qué forma? ¿Si es no, por qué?

2.3	¿ Cuáles son los elementos que usted considera esenciales para el proceso de evaluación de los aprendizajes? ¿Por qué?

2.4	¿Acostumbra a proveer <i>feedback</i> a los alumnos? ¿Si es si, en que momento(s) y de qué forma? (individual, colectivo, oral, escrito, otra...)

2.5	¿ Cuáles considera usted, son los aspectos más positivos dentro de las prácticas de evaluación de los aprendizajes en su materia? ¿ Cuáles son los aspectos que necesitan mejoramiento?

2.6	¿Cómo describe su forma/estilo de enseñanza? ¿Cuáles son los métodos que usted privilegia?

2.7	¿Cómo articula la forma como evalúa a los alumnos y la manera como organiza la enseñanza y el aprendizaje de los alumnos?

Conclusión: ¿Le gustaria añadir alguna pregunta, o realizar algún comentario que considere pertinente para la discusión de esta temática?

Por favor, utilice este espacio.

FORMULARIO DE CONSENTIMIENTO INFORMADO

ENTREVISTAS

Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación

Secundaria: Un estudio de Método Mixto en Ecuador

Declaro que acepto participar de manera libre y voluntaria en el estudio, de autoría de Jorge Hamilton Leal Cevallos (Estudiante de Doctorado del Instituto de Educación de la Universidad de Minho - Portugal), orientado por la Profesora Doctora Maria Assunção Flores (Profesora Asociada con Agregación del Instituto de Educación de la Universidad de Minho), en el ámbito del proyecto de doctoramiento en Ciencias de la Educación, especialidad en Desarrollo Curricular, titulado “Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación Secundaria: Un estudio de Método Mixto en Ecuador”.

Certifico que me fueron explicados y comprendí los objetivos principales de este estudio y las cuestiones éticas de investigación. **En este sentido, entendí y acepto participar en la fase II del proyecto. Participaré en una entrevista, que explora cuestiones sobre las Perspectivas de Evaluación de los Profesores y Estudiantes en la Educación Secundaria del Ecuador.**

Comprendo que mi participación en este estudio es voluntaria, pudiendo desistir en cualquier momento, sin que esa decisión se refleje en cualquier perjuicio para mí. He comprendido las reglas de transcripción de datos, autorizo que la entrevista en que participo sea grabada en audio (en el caso de ser presencial o por vía telemática) y que esa grabación sea guardada por un período de cinco años después de la conclusión del proyecto.

Entiendo, además, que toda la información obtenida en este estudio será estrictamente confidencial y que mi identidad nunca será revelada en cualquier informe, publicación, o a cualquier persona no relacionada directamente con este estudio.

El/La participante

El investigador

Jorge Hamilton Leal Cevallos

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