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# Analyzing the teaching profile and competency-based training in online education: a case study of Ecuadorian professors

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In the global landscape of education, the online modality has emerged as indispensable for extending access to academic training. This study delves into the teaching profile and competency-based training in online education within the context of Ecuador, a developing nation in South America. Employing a qualitative and exploratory approach, an exhaustive documentary review was conducted, followed by a comparative analysis of gathered information. The documentary review encompassed a meticulous examination of academic literature, governmental policies, and curricula pertaining to online education in Ecuador, with emphasis on selecting pertinent and representative sources. Through the comparative analysis, discernible patterns, similarities, differences, and trends regarding the teaching profile and competency-based training in Ecuadorian online education were identified. The findings present a comprehensive portrayal of how these dimensions have been addressed within Ecuador, thereby serving as a benchmark for future research endeavors. Moreover, they contribute to the advancement and enhancement of online academic programs not only within Ecuador but also in analogous contexts globally. Furthermore, the results offer valuable retrospective insights into the evolution of online education in Ecuador, shedding light on areas of strength and opportunities for refinement within this educational paradigm.

## KEYWORDS

online education, teaching profile, training by competencies, teaching perspective, academic training

## 1 Introduction

The exponential growth of online education in recent years constitutes an irrefutable testimony of its growing relevance in contemporary society (Shailendra et al., 2018; García-Vandewalle García et al., 2021). In an increasingly digitalized world, distance education has become an educational option that transcends geographical and temporal barriers. This phenomenon has generated considerable interest in the academic community and educational policies, leading to a significant increase in online educational programs in Ecuador.

The professional profile of teachers who participate in online education has acquired an unavoidable significance in guaranteeing the quality and effectiveness of academic programs (Day and Leitch, 2007; Macías et al., 2022). Teachers in this environment must possess strong knowledge in their areas of specialization and be competent in using information and communication technologies (ICT) and applying appropriate pedagogical

strategies for online learning. Teachers' profiles must be multidimensional and adaptable to the changing demands of online education (Howard et al., 2021). Adopting pedagogical approaches focused on competencies has become a fundamental pillar of the online education modality (Verger and Curran, 2014; Falloon, 2020). Competency-based teaching focuses on developing practical skills and knowledge that students can apply in real situations. This requires teachers to convey information and design learning experiences that encourage problem-solving, critical thinking, and practical application of knowledge (Shanta and Wells, 2022).

Scientific literature highlights the urgent need to understand how teachers adapt and develop in the online education environment because this modality poses specific challenges in contrast to face-to-face teaching (Mullen, 2020; Panduro et al., 2022; Cevallos Zambrano et al., 2023). These challenges include the need to master Information and Communication Technologies (ICT; Ra et al., 2016) and the ability to design effective online learning experiences (Díaz et al., 2021). In Ecuador, a developing country seeking to advance its online education offering, it is essential to understand how teachers prepare and develop to meet these challenges (Sevy-Biloon, 2021). The quality of teacher training directly impacts the quality of online education offered (Hidalgo-Andrade et al., 2021). The lack of specific research addressing the teaching profile and competency training in Ecuador's online education context is evident and constitutes a gap that must be addressed (Cejas et al., 2019).

Regarding the practical benefits of this study, it highlights the benefits of online education and the main features of the teachers' profile for its realization. Our society establishes online education as an alternative educational modality (Rochina Chisag and Tabuena, 2022), overall in pandemic time scenarios (Vásquez, 2022). The results of this research will benefit not only universities and teachers involved in online education in Ecuador and other similar countries but also offer valuable information to inform educational policies and improve the quality of online education. By better understanding the specific needs and challenges of teachers in this context, more effective training strategies can be developed, and excellence in online teaching can be promoted. Thus, this article analyzes the teaching profile and competency-based training in online education courses at Ecuadorian public universities. Through a meticulous review of existing literature and the collection of empirical data, it seeks to provide a comprehensive understanding of how these aspects are being addressed in the educational institutions in question.

The rest of this paper is organized as follows. Section 2 describes the main characteristics of distance and online education in pandemic time. Section 3 defines teacher training in virtual spaces. Section 4 gives details and discusses the academic results obtained concerning the importance of teacher training and the adoption of competency-based approaches in online education in Ecuador. Section 5 summarizes the main limitations of online education. In the Conclusions section, the paper details the benefits of our educational experience and motivation for continuing to apply it in similar contexts in other in-developing countries like Ecuador.

## 2 Background

### 2.1 The evolution of distance and online education

Online higher education offers many benefits that cater to the diverse needs and circumstances of modern learners (Khan et al., 2022). One of the most significant advantages is its accessibility: students from various geographical locations, including remote areas, can access quality education without distance constraints (Khan et al., 2021a). This accessibility breaks down barriers to education, allowing individuals who may have otherwise been unable to pursue higher studies due to location or time constraints to enroll in courses and programs of their choice.

Another benefit of online education is the overall nearness of people to technology in educational environments during the pandemic. The work of Tupac-Yupanqui et al. (2022) demonstrates the applicability of using online technology for effectively developing programming competencies. Likewise, the work of Vidal-Silva et al. (2022) describes experiences of using a programming language with Google technology to reduce classroom dependency on learning. The work of Cárdenas-Cobo et al. (2023) also shows the usefulness of an online platform for developing programming competencies in school children.

As Khan et al. (2021b) argue, flexibility is another crucial advantage of online education in higher education. Learners can study at their own pace and schedule, balancing their academic pursuits with work, family responsibilities, or other commitments. This flexibility empowers students to create personalized learning environments conducive to their unique learning styles and preferences. They can review materials, participate in discussions, and complete assignments at times that suit them best, fostering a more effective and efficient learning experience.

Online education often offers a broader range of course options and specializations than traditional brick-and-mortar institutions (Khan et al., 2021c). This variety enables students to explore diverse subjects, niche fields, and specialized certifications that align with their career goals and interests. Learners can access courses from top universities and institutions worldwide through online platforms, expanding their horizons and gaining insights from experts in various fields.

The interactive nature of online learning platforms also enhances student engagement and participation (Gopinathan et al., 2022). Students can interact with instructors and peers through virtual classrooms, discussion forums, multimedia content, and real-time feedback mechanisms (Yu, 2016). As Tang et al. (2020) discuss, this collaborative learning environment promotes critical thinking, problem-solving skills, and exchanging ideas, creating a dynamic and enriching educational experience. Furthermore, online education often proves to be more cost-effective for students, as it eliminates expenses associated with commuting, accommodation, and traditional course materials (Garlinska et al., 2023). This affordability makes higher education more accessible to a broader demographic, including working professionals seeking career advancement or individuals looking to reskill or upskill in a rapidly evolving job market.

As [Leo et al. \(2021\)](#) remark, the benefits of online education in higher education are vast and impactful. From increased accessibility and flexibility to diverse course offerings and enhanced student engagement, online learning has revolutionized the educational landscape, empowering learners to pursue their academic aspirations regardless of their circumstances ([Mrayhi et al., 2024](#)). As technology continues to evolve, online education remains a vital and transformative force in shaping the future of higher education worldwide.

## 2.2 The evolution of distance and online education in Ecuador

The evolution of distance and online education in Ecuador reflects its significant growth in recent decades, which attests to its growing relevance in contemporary society ([Henríquez-Mendoza et al., 2022](#); [Torres-Díaz et al., 2022](#)). Online education has its roots in international experiences and finds its foundations in Open and Distance Learning (ODL; [Sasan and Baritua, 2022](#)). The true boom of distance and blended education supported by the Internet in Ecuador began in the 1st years of the 21st century, specifically in 2000 and 2001 ([Victorino-Ramírez, 2012](#)). In that period, pioneering academic institutions such as Universidad Técnica Particular de Loja (UTPL), Universidad de las Fuerzas Armadas (ESPE), Universidad de Las Américas (UDLA), and the Universidad San Francisco de Quito (USFQ) introduced online higher education programs, marking a milestone in the evolution of education in Ecuador ([Centre, 2015](#)).

Despite the rapid development of virtual and online education, this educational modality has faced notable challenges ([Salas-Pilco et al., 2022](#)). In Ecuador, one of the main challenges lies in the country's technological conditions, which have not always been the most conducive to guaranteeing the success of online education ([Okoye et al., 2023](#)). This historical evolution of distance and online education in Ecuador highlights the need to understand the trajectory and challenges to consolidate itself as a relevant educational modality in the national and international context.

## 2.3 Pandemic time and the increase in online supply

The response to the COVID-19 pandemic has significantly impacted higher education worldwide, driving a rapid increase in online program offerings by universities ([Guppy et al., 2022](#); [Farsawang and Songkram, 2023](#); [Greyling and Wolhuter, 2023](#)). That situation has led to fundamentally reevaluating teaching methods and strengthening online education as a viable and necessary alternative in higher education. As [Anthony Jnr and Noel \(2021\)](#) remark, the COVID-19 pandemic, which began in 2019, brought restrictions on mobility and social distancing measures, forcing educational institutions to close their physical campuses and adopt distance learning modalities temporarily ([Adedoyin and Soykan, 2023](#)).

The COVID-19 pandemic also created a growing demand for online programs, allowing students to continue their studies safely and effectively from their homes ([Klusmann et al., 2022](#)).

In response to this demand, many universities worldwide, and in Ecuador specifically, expanded their program offerings, quickly adapting their traditional courses and programs to virtual environments ([Chans et al., 2023](#); [Garcia et al., 2023](#)). This transition was based on the need to guarantee educational continuity and access to higher education amid the extraordinary circumstances of the pandemic.

The expansion of online offerings allowed universities to fulfill their commitment to providing quality education and revealed the importance of flexibility in the education modality ([Leal Filho et al., 2022](#)). That education modality can be adapted to various situations, not only in times of crisis, to address the needs of students who require flexibility due to work, geographic location, or family responsibilities ([Samortin et al., 2022](#)). In the current context, online degrees have emerged as an effective and relevant response to address the health crisis triggered by the COVID-19 pandemic. These educational modalities have demonstrated their ability to meet the changing needs of society while offering a quality educational option ([Caron, 2021](#)).

The pandemic outbreak imposed unprecedented challenges on higher education institutions, which were forced to adapt to the exceptional circumstances quickly ([Crawford, 2023](#)). In this context, the promotion and expansion of online training emerged as valid and effective educational alternatives ([Ahmed and Opoku, 2022](#)). This response allowed institutions to continue their academic programs and ensured the safety and wellbeing of students and teaching staff by reducing exposure to the risk of contagion. Thus, we can perceive that the relevance of online education in the current scenario goes beyond its role in mitigating the effects of the pandemic. Online education has also become essential for transforming higher education in Ecuador by offering an educational modality that is more accessible and adaptable to changing circumstances. This modality provides flexibility regarding time and place and encourages the development of digital skills and competencies necessary in today's society.

We can highlight that online education has not only become a temporary solution but has demonstrated its ability to promote educational inclusion, reach remote communities, and expand access to higher education nationwide. Its importance lies in its ability to overcome geographical and temporal barriers, which makes it a fundamental pillar in the evolution of the Ecuadorian educational system. Thus, this research defines the following research question.

**Research Question Q1:** What are the necessary competencies for teaching in online education modality?

**Research Question Q2:** Can university teachers in Ecuador effectively teach in online education modality?

## 3 Teacher training in virtual spaces

The preparation of teachers in managing virtual environments in Ecuador was characterized by its scarcity, particularly in the context of higher education, before the pandemic. This situation required a rapid and substantial transformation in pedagogical practices and the adoption of digital technologies ([Dwivedi et al., 2020](#)). However, it was identified that many teachers faced

deficiencies in their technical knowledge and experience in online teaching (Opanasenko and Novikova, 2023).

The advent of the COVID-19 pandemic forced educational institutions to implement immediate measures to ensure the continuity of teaching. This crisis highlighted the pressing need to train teachers to use virtual tools and platforms effectively and adapt their pedagogical strategies to online environments (El Bettioui et al., 2022). Teacher training became a crucial element in maintaining the quality of education and ensuring the delivery of content effectively through digital media. However, it was identified that many teachers lacked the technical competence necessary to effectively use digital technologies in the teaching-learning process (Leroux et al., 2017). This gap highlighted the importance of developing specific training programs that address the skills and knowledge required for online teaching. Furthermore, the need to promote the acquisition of essential digital skills, not only for the teacher but also for the students, was highlighted to improve the online educational experience.

In the context of the educational transformation generated by online education, a significant emphasis on developing competencies in students has emerged, leading to a critical review of academic and professional profiles (Baran et al., 2011). In this context, competencies are defined as a dynamic amalgamation of attributes encompassing procedures, skills, attitudes, and responsibilities that students can demonstrate at the end of their training process (Savic and Kashef, 2013; Guinda and Breeze, 2017).

The concept of the professional profile is conceived as the set of distinctive features and skills that allow the identification of a professional in a specific field of knowledge (Cerritelli et al., 2021). Within online education, a pedagogical model has been forged that is characterized by its flexibility and openness, which adapts to students' individual experiences and focuses on developing highly relevant professional competencies in the current market labor (Van Der Vleuten and Schuwirth, 2005; Jackson and Wilton, 2016). In this sense, online education becomes a favorable scenario to promote the development of key competencies that include, among others, effective oral and written communication, the capacity for creative and critical analysis, the ability to reflect independently, and the ability to work collaboratively in multicultural contexts (Kivunja, 2015). Likewise, the importance of students acquiring skills that allow them to evaluate alternatives conveniently, select appropriate strategies, and assume responsibility for the decisions made in their respective professional fields is emphasized. This competency-focused approach seeks to equip students with skills that transcend the simple collection of theoretical knowledge, focusing on their ability to apply that knowledge in real and changing situations effectively. In addition, it promotes the development of an integrated vision of reality, an open and critical attitude, the ability to dialogue constructively, the competence to work productively in multidisciplinary teams, and a solid base in digital skills necessary for managing emerging technologies.

### 3.1 Competence profile for online higher education

Based on the contribution of several experts in online education (Marchand, 2001; Marchand and Loisir, 2003), a competency

profile has been formulated to offer an integrative and guiding perspective for higher education institutions that participate in developing online programs with the main purpose of guiding the selection processes of academic personnel and to provide direction to the training and professional development programs of the teaching staff. This profile comprises five general competencies, which are described in detail below.

- **Technological competencies:** Technological competencies include skill in handling technological tools and the skills related to their use. This encompasses identifying and adopting technological changes and advances to improve educational processes through interaction with students and other faculty members (Brassier-Rodrigues, 2022).
- **Investigative competencies:** This competence encompasses a set of skills, knowledge and attitudes that teaching staff must possess to critically analyze educational reality, both from their practical experience and through the systematic and rigorous search for solutions to research problems that arise in their pedagogical practice. It is intended that teachers investigate based on their pedagogical experience and generate new knowledge that contributes to improving educational processes (Böttcher and Thiel, 2018).
- **Pedagogical competencies:** Pedagogical skills are essential for teachers in the field of online education. They imply having a deep knowledge of teaching and learning theories and curricular management. This allows teachers to design, develop, and evaluate effective pedagogical proposals that are relevant to the characteristics of the students and that lead to meaningful learning. In addition, it involves staying up to date with scientific advances in education and designing strategies to apply new learning theories in effective educational processes (Marougkas et al., 2023).
- **Academic leadership competencies:** Academic leadership is vitally important for online teachers, allowing them to exercise effective leadership with their students and in the educational environment. These competencies include the commitment to academic excellence, the ability to lead the growth and enrichment of the educational organization through pedagogical practice, and the integration of all other competencies (Lucena et al., 2008; Chu et al., 2021).
- **Social competencies:** Within online education, the interaction between teachers and students plays a crucial role. Therefore, teachers must develop social competencies that allow them to establish effective communication with their student population and maintain high motivation for learning. These competencies include cognitive and socio-affective domains that promote harmonious coexistence and the comprehensive development of students (Del Cerro Velazquez and Lozano Rivas, 2020).

This competency profile has been developed by considering various proposals found in the literature review. It aims to provide a complete guide for the professional development of online higher education teachers. Table 1 is presented below, which provides a detailed description of the competencies required for online higher education teachers. This table, supported by quotes from prominent authors in the educational field, highlights the essential skills teachers must possess in the online education environment.



TABLE 1 Competencies for online higher education teachers.

Competence	Description	References
Technological competencies	Mastery of technological tools and skills for their use, adaptation to technological changes to improve education.	García et al., 2021
Investigative competencies	Skills to critically analyze educational reality, investigate pedagogical problems and generate new knowledge.	Böttcher and Thiel, 2018
Pedagogical competencies	Deep knowledge of teaching and learning theories, ability to design effective strategies and apply new theories.	Ezechil and Coman, 2012; Pekkarinen and Hirsto, 2017
Leadership competencies	Ability to exercise effective leadership both with students and in the educational environment, promoting academic excellence.	Korzynski et al., 2021
Social competencies	Development of social skills for effective communication with students and maintaining motivation for learning.	Grover et al., 2020

These competencies play a fundamental role in the quality and effectiveness of online teaching and are, therefore, crucial for the success of academic programs in this context.

## 4 Evaluating teacher in online education

Teacher training and adopting competency-based approaches in online education are two crucial aspects that significantly impact the quality and effectiveness of educational programs in Ecuador. Preparing highly competent teachers and implementing competency-based programs are essential to address the growing demands of online education, especially in the current context of accelerated educational transformation. In this context, Table 2, as a comparative table, analyzes the main characteristics of the teaching profile and training by competencies in online education in Ecuador. This table aims to provide a clear and concise view of how these two key aspects intertwine and contribute to the development and success of online education in the country.

### 4.1 Results

Table 2, as a comparative table, thoroughly evaluates two critical elements in Ecuador's online education context: Teaching profile and Competency-based training. Evaluating those elements is based on previous research and quotes from prominent experts, allowing for a deep exploration of the importance and implications of these aspects within the Ecuadorian educational environment. The next lines describe each evaluation point.

1. The teacher profile, in essence, represents the skills, knowledge, and attitudes required for teachers to play their role in online education effectively. In contrast, competency-based training is

TABLE 2 Teacher profile vs. training by competencies in online education in Ecuador.

Aspect	Teacher profile in online education in Ecuador	Training by competencies in online education in Ecuador
<b>Definition</b>	Set of skills, knowledge, and attitudes that teachers must possess to deliver online education effectively.	Pedagogical approach that is based on the acquisition and development of specific skills by students.
<b>Orientation</b>	It focuses on the development of technology, pedagogy, and social skills of teachers.	Focused on the development of specific competencies in students that allow them to achieve defined learning outcomes.
<b>Main components</b>	Technological, investigative, pedagogical, academic leadership and social skills.	Specific competencies aligned with the learning objectives and professional profile of the students.
<b>Main goal</b>	Prepare teachers to deliver high-quality online education.	Develop the necessary skills and knowledge in students to face academic and professional challenges.
<b>Professional development</b>	Focus on the training and continuous training in online teachers.	It focuses on the development of competencies in students throughout their academic career.
<b>Assessment</b>	The evaluation of the teaching profile is based on the observation of their performance in online teaching.	The evaluation of students' competencies are carried out by measuring their performance and achievements concerning established standards.
<b>Results</b>	Highly competent and qualified teachers for online education.	Students who acquire specific skills that prepare them for the labor market and academic success.
<b>Impact on education</b>	It contributes to the quality of online education and the success of academic programs.	Transform online education into an experience focused on learning and skills.

based on a pedagogical approach that focuses on developing specific student skills, oriented toward practical application in real situations (Hoogveld et al., 2005).

- In terms of orientation, the teaching profile prioritizes training in technological, pedagogical, and social skills for teachers, emphasizing the importance of their competence both in the use of technologies and in pedagogy adapted to online education (Benson and Ward, 2013; Ben-David Kolikant, 2019).
- Competency-based training focuses on developing specific competencies in students, which translates into the achievement of clearly defined learning outcomes and relevant skills for their academic and professional future.
- Concerning the main components, the teaching profile covers various competencies, including technological, investigative, pedagogical, academic leadership, and social skills. This diversity reflects the multifaceted nature of the online teacher's role and the need to adapt to multiple aspects (Smith, 2011).
- Competency-based training focuses on specific competencies that directly align with students' learning objectives and professional profiles, ensuring their relevance and applicability (Biemans et al., 2004; Wesselink et al., 2010).

6. Regarding the main objectives, the teaching profile mainly pursues the preparation of highly qualified and competent teachers to provide high-quality online education. This is considered essential to ensure an effective learning experience. In contrast, competency-based training primarily seeks to develop students' skills and knowledge to face academic and professional challenges. This vision aligns with the belief that education should be relevant and prepare students for the job market.
7. Regarding professional development, the teaching profile emphasizes online teachers' training and continuous training, guaranteeing their constant updating in technology and pedagogy (Caena and Redecker, 2019). On the other hand, competency-based training focuses on developing competencies in students throughout their academic careers, reflecting an approach centered on the student and their growth over time.
8. The evaluation of these two elements differs significantly. The evaluation of the teacher profile is largely based on the observation of the teacher's performance in online teaching, indicating a teacher-centered approach. In contrast, student competencies are assessed by measuring their performance and achievements concerning established standards, demonstrating an approach focused on the student and their learning outcomes.
9. A strong teaching profile ultimately contributes to the quality of online education and the success of academic programs, which is critical to providing students with a high-quality, effective learning experience. On the other hand, competency-based training transforms online education into an experience focused on learning and competencies, potentially preparing students more effectively for the job market and academic success.

The competencies in Table 1 allow us to answer RQ1. Likewise, we can also positively answer RQ2; that is, teachers and university professors in Ecuador can effectively teach in virtual scenarios (online education) by considering each aspect's results regarding the profile and competencies in online education of teachers in Table 2. The data is available in: <https://drive.google.com/drive/folders/1EE8g83EhdCY-hqa8MrZZSnifnjRqPoji?usp=sharing>.

## 5 Limitations of online education

Online education in higher education has undoubtedly opened doors to a more accessible and flexible learning environment, yet it also comes with limitations (Hofer et al., 2021). One of the primary challenges is the potential for a lack of personal connection and interaction among students and instructors (Guzzardo et al., 2021). The absence of face-to-face interaction in online courses can hinder opportunities for meaningful discussions, collaborative learning, and immediate feedback that traditional classroom settings often provide (Kalmar et al., 2022). This limitation can lead to feelings of isolation among students, impacting their engagement and motivation.

Another significant limitation is the digital divide, which refers to students' unequal access to technology and the Internet (Van De Werfhorst et al., 2022). Not all students have the same level of access to reliable internet connections, up-to-date devices, or

the necessary software for online learning. This disparity can create barriers to participation and success, as students from underserved communities or rural areas may struggle to keep up with coursework or fully engage in online activities (Sohel et al., 2024).

Concerns about academic integrity can make the effectiveness of online assessments and exams questionable (Holden et al., 2021). Cheating and plagiarism can be more challenging to monitor and prevent in virtual settings, raising doubts about the validity and fairness of online evaluations (Siddhpura and Siddhpura, 2020). This issue requires innovative approaches and robust technologies to uphold academic honesty while ensuring a level playing field for all students.

The design and delivery of online courses can sometimes lack the richness and depth of traditional classroom experiences (de Souza Rodrigues et al., 2021). Courses must be carefully structured to maintain student interest and engagement throughout the learning process. Without proper instructional design and technology integration, online courses risk becoming monotonous or overwhelming, affecting the quality of learning outcomes (Hensen, 2023).

Self-discipline and time management skills are paramount in online education (Razavi and Soltani, 2023). While the flexibility of asynchronous learning allows students to study at their own pace, it also requires a high level of self-motivation and organization to stay on track with coursework and deadlines. Some students may struggle with the autonomy that comes with online learning, mainly if they are accustomed to more structured, in-person classes.

Addressing previous limitations, institutions and educators must continuously innovate and adapt online education to meet students' diverse needs better (Hofer et al., 2021). Strategies such as increased support services, enhanced digital literacy training, and dynamic, interactive course designs can help mitigate these challenges and create a more inclusive and effective online learning environment in higher education (Wei, 2023).

## 6 Conclusions

The study highlights the importance of two fundamental elements in online education in Ecuador: the teaching profile and competency training. A comparative analysis and review of previous research supported by citations from relevant authors have identified key findings that underline its relevance and implications in the Ecuadorian educational system. Firstly, it has been highlighted that the teaching profile in online education demands an amalgamation of unique competencies encompassing technological, pedagogical, and social skills. Teachers must be versed in the effective use of technology, able to design high-quality online learning experiences, and prepared to foster interaction and communication in virtual environments. Undeniably, teachers' training and continuous training in these areas is imperative to guarantee their competence in a constantly evolving environment. In contrast, competency-based training focuses on developing specific skills in students. This pedagogical approach seeks to empower students with specific skills applicable and relevant to their future academically and professionally. This orientation transforms online education into an experience that focuses on

learning and skill acquisition, potentially improving students' preparation to meet the challenges of today's labor market.

Additionally, it has been observed that the evaluation of the teaching profile is based primarily on the observation and evaluation of the teacher's performance in online teaching. In contrast, assessing students' competencies is carried out by measuring their performance and achievements concerning predefined standards. These differences in assessment approaches reflect an emphasis on the role of the teacher in the teaching profile and a student-centered orientation in the competency-based training approach.

Ultimately, it is concluded that a solid and competent teaching profile contributes significantly to online education quality and academic programs' success. Highly competent teachers are critical in delivering a high-quality, effective student learning experience. On the other hand, competency-based training presents transformative potential by preparing students more effectively to face the challenges of the labor market and achieve academic success by focusing on their specific needs and objectives. These results are valid for Universities in Ecuador and other similar countries. Online education is part of our society now, and teachers must develop competencies for applying it successfully.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Author contributions

GC: Conceptualization, Funding acquisition, Project administration, Writing - original draft, Writing - review

& editing, Data curation, Formal analysis, Investigation, Methodology, Resources, Software, Supervision, Validation, Visualization. JC-C: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing - original draft, Writing - review & editing. MS: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing - original draft, Writing - review & editing. CV-S: Conceptualization, Funding acquisition, Project administration, Writing - original draft, Writing - review & editing.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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