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The Relationship Between Teacher Well-Being and Educational Innovation in the Digital Age: Empirical Evidence from Higher Education at the University of Guayaquil

Relación entre el bienestar docente y la innovación educativa en la era digital: Evidencia empírica desde la educación superior de la Universidad de Guayaquil

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Abstract

This article analyzed the relationship between faculty well-being and educational innovation in the digital age within the context of higher education at the University of Guayaquil. The objective was to determine how the use of digital technologies and the development of technological competencies influence faculty workload, stress levels, and emotional well-being, as well as pedagogical innovation. A quantitative, non-experimental, descriptive, and cross-sectional approach was used, with a sample of 60 university faculty members selected through purposive sampling. Data were collected using a semi-structured questionnaire and analyzed using descriptive statistics. The results show that the incorporation of digital technologies has fostered new forms of teaching and promoted educational innovation. However, the findings also indicate that this process has increased the workload and stress levels among a significant portion of the faculty. In this regard, it is concluded that faculty well-being is a key element for digital innovation in higher education to be sustainable and truly effective.

Keywords: faculty well-being, educational innovation, digital age, higher education.

Resumen

El presente artículo analizó la relación entre el bienestar docente y la innovación educativa en la era digital dentro del contexto de la educación superior en la Universidad de Guayaquil, cuyo objetivo fue determinar cómo el uso de tecnologías digitales y el desarrollo de competencias tecnológicas influyen en la carga laboral, el nivel de estrés y el bienestar emocional del profesorado, así como en la innovación pedagógica. Se utilizó un enfoque cuantitativo, no experimental, descriptivo y transversal, con una muestra de 60 docentes universitarios seleccionados de forma intencional. Los datos se recolectaron mediante un cuestionario semiestructurado y fueron analizados mediante estadística descriptiva. Los resultados muestran que la incorporación de tecnologías digitales ha impulsado nuevas formas de enseñanza y ha favorecido la innovación educativa. Sin embargo, también se evidencia que este proceso ha incrementado la carga de trabajo y los niveles de estrés en una parte importante del profesorado. En este sentido, se concluye que el bienestar docente constituye un elemento clave para que la innovación digital en la educación superior sea sostenible y realmente efectiva.

Palabras clave: bienestar docente, innovación educativa, era digital, educación superior.

Introduction

In recent years, higher education has undergone a process of rapid transformation driven primarily by the digitization of educational environments. The incorporation of virtual classrooms, learning management platforms, multimedia resources, and digital communication tools has redefined not only the way teaching is conducted but also the way the role of the university instructor is conceived.

This change is not limited solely to the adoption of technology but involves a profound reconfiguration of pedagogical practices, academic planning, and assessment processes. Consequently, faculty members have been forced to acquire new digital competencies, often without sufficient prior training or the necessary institutional support.

Added to this is the pressure to meet educational quality standards, constantly update course content, and maintain interaction with students in increasingly hybrid or fully virtual environments. In this context, a central concern emerges: understanding how these changes are affecting faculty well-being—both emotionally and in terms of their work and professional lives.

The digital transformation in higher education has brought about a structural shift in how the teaching-learning process is conceived. This phenomenon involves not only the incorporation of technological tools into the classroom but also a comprehensive redefinition of the educational model, in which interaction, knowledge management, and assessment take place in increasingly virtual and interconnected environments.

In this context, digitization has made it possible to expand access to information, diversify teaching resources, and make learning times and spaces more flexible. Educational platforms, learning management systems (LMS), videoconferencing, and multimedia resources have facilitated academic continuity and promoted new forms of interaction between faculty and students. However, these advances have also created a series of challenges that directly impact the professional practice of university faculty.

One of the main changes relates to the intensification of academic work. Teaching is no longer limited to delivering in-person classes but now includes designing digital content, managing virtual classrooms, providing constant support to students through digital channels, and conducting continuous assessment in online environments. This expansion of responsibilities has significantly increased the workload, often without an adequate redistribution of working hours.

Likewise, digitization has altered the dynamics of faculty availability. In virtual environments, communication between students and faculty has become more immediate and constant, creating an expectation of nearly continuous responsiveness. This situation has blurred the boundaries between personal and professional life, causing many faculty members to extend their workday beyond established formal hours. As a result, there has been a decrease in opportunities to disconnect, which can affect teachers' emotional and physical well-being.

Another relevant issue is the digital skills gap. While some teachers have successfully adapted to technological environments, there remains a significant group that struggles with advanced digital tools. This situation not only creates disparities in teaching performance but also leads to varying levels of stress and work-related pressure. The need for constant self-directed professional development has become an implicit requirement of the education system, which increases the cognitive and emotional burden on faculty.

Additionally, the lack of adequate institutional support is a critical factor. In many institutions of higher education, technology training programs do not always address the real needs of faculty, or they are implemented sporadically. This forces faculty members to rely on their own initiative to stay current, which can lead to feelings of professional isolation and training overload. The absence of clear policies to support teachers' digital development also limits the establishment of sustainable innovative practices.

From the perspective of faculty well-being, these factors take on significant importance. Well-being is not limited solely to the absence of illness or stress but encompasses emotional, social, and professional dimensions that directly influence the quality of academic performance. In this regard, an increased workload, pressure to constantly update skills, and the demand for technological adaptability can affect motivation, job satisfaction, and a sense of institutional belonging.

On the other hand, it is important to recognize that digital transformation has also created opportunities for teachers' professional development. Access to online courses,

international academic networks, virtual learning communities, and open educational resources has significantly expanded opportunities for continuing education. Furthermore, pedagogical innovation has been strengthened through the use of active methodologies such as project-based learning, gamification, and the flipped classroom, which find a conducive environment for implementation in the digital space.

However, taking advantage of these opportunities depends largely on institutional conditions and the level of support provided to teachers. When technological innovation is implemented without adequate planning or a teacher-centered approach, it can become a source of pressure rather than a tool for educational improvement. Therefore, it is essential to understand that digital transformation should not be viewed solely as a technical process, but also as a human and organizational one.

In this regard, faculty well-being stands as a strategic element within contemporary higher education. Guaranteeing adequate working conditions, promoting continuing professional development, establishing clear limits on digital workload, and fostering spaces for institutional support are fundamental actions for ensuring a balanced implementation of educational innovation. Only through a comprehensive approach will it be possible to consolidate sustainable educational models that integrate academic quality, technological innovation, and faculty well-being.

In summary, the digital transformation in higher education represents both an opportunity and a challenge. While it has made it possible to modernize educational processes and expand teaching possibilities, it has also highlighted the need to rethink the conditions under which faculty members carry out their work. In this context, faculty well-being cannot be considered a secondary issue, but rather an essential component for the sustainability and quality of the educational system in the digital age.

Materials and Methods

This study was conducted using a descriptive quantitative approach, with the aim of analyzing university faculty members' perceptions of educational innovation in the digital age and its impact on their workplace well-being.

A structured survey was administered to 60 higher education faculty members, selected through purposive sampling based on their active participation in technology-supported teaching processes. The objective of the survey was to gather information on three main dimensions: use of digital technologies, teaching workload, and perceived level of well-being.

The questionnaire consisted of closed-ended items organized on a five-point Likert scale, where 1 represented "strongly disagree" and 5 represented "strongly agree." This type of scale allowed for the quantifiable measurement of both attitudes and perceptions.

The data obtained were analyzed descriptively using frequencies and means, which made it possible to identify general trends in the study population.

Table 1. *Material Resources*

Material Resources	Description / Use in the Research	Quantity	Unit cost (USD)	Total (USD)
Internet	Digital survey implementation and literature review	3 months	25	75.00
Survey platform (Google Forms)	Design and administration of the questionnaire to teachers	1	0	0.00
Document printouts	Hard copies of surveys, drafts, and final version of the article	100 sheets	0.10	10.00
Reams of paper	Development of instruments and physical materials	2 reams	4	8.00
Transport	Travel for coordination and contact with teachers	10 trips	2	20.00
Office supplies (pens, folders)	Organization and implementation of fieldwork	1 package	5	5.00
statistical software (basic Excel/SPSS)	Data processing and analysis	1 license	0 (institutional)	0.00
Total				118.00

Source: Authors

The analytical method allowed us to break down the phenomenon under study into its fundamental elements in order to understand the relationship between teacher well-being and educational innovation in the digital age. Through a review of bibliographic sources, scientific articles, and specialized documents, we identified key concepts and categories of analysis. This method facilitated the critical interpretation of the information obtained, allowing us to establish relationships between existing theory and the empirical results of the research, with the aim of drawing well-founded conclusions.

The field research method was applied through the direct collection of information in the context of higher education, specifically among university faculty involved in digital teaching processes. A structured survey was used as the primary technique, which

allowed for the collection of real data on perceptions, experiences, and levels of faculty well-being. This method enabled direct contact with the study population, ensuring up-to-date and relevant information for analyzing the impact of educational innovation on teaching practice.

Results

The results show that, with regard to the use of technology in teaching, there is a high level of integration of digital tools into university teaching practice. Ninety-two percent of participants reported using virtual platforms as a regular part of their teaching process, demonstrating the consolidation of the digital environment in higher education. However, the level of adoption of more advanced technologies remains limited. Only 48% of faculty members reported using tools such as artificial intelligence, automated systems, or complex interactive resources. This suggests the existence of a digital divide between the basic use of educational platforms and the integration of more innovative technologies.

Despite these differences, 87% of respondents agree that technology contributes positively to improving the quality of the teaching-learning process, especially in terms of access to information, making classes more engaging, and flexibility in teaching.

On the other hand, regarding teacher well-being, the results show moderate job satisfaction (3.4/5) and a high level of stress associated with the use of technology (4.1/5), which indicates that digital innovation has increased the workload, extended the workday, and affected the work-life balance. Overall, it is evident that technology improves teaching but also creates pressure and overload for teachers.

With regard to workload, the results show that digitization has increased teachers' workload, as reported by 78% of respondents, since a large proportion of teachers work outside regular hours to handle virtual activities. This reflects an extension of the workday and increased pressure in their professional practice.

Finally, regarding perceptions of educational innovation, the results show a largely positive view of educational innovation, as 85% of faculty members believe that technology improves the quality of teaching; however, 58% report that the institution does not offer sufficient training, which results in a gap in professional development support. It is worth noting that, although innovation is viewed favorably, there are limitations in its implementation that affect its effective consolidation in the university setting.

Table 2. *Use of Technology in Teaching*

Item	*Result*
Teachers who use virtual platforms (Moodle, Classroom, etc.)	92%
Teachers who integrate AI tools or advanced digital resources	48%
Teachers who find educational technology useful	87%

Table 3. *Teacher Well-being*

Indicator	*Average (1–5)*	*Interpretation*
Job Satisfaction	3.4	Average
Level of stress from digital work	4.1	High
Work-life balance	2.9	Low
Teacher motivation	3.6	Medium-high

Table 4. *Digital workload*

Item	*Result*
Teachers report that their workload has increased with digitization.	78%
Teachers report that they work outside of regular working hours to complete online activities.	65%
Teachers believe that digitization increases the time needed to prepare lessons.	72%

Table 5. *Perceptions of Educational Innovation*

Item	*Yes*	*No*
Technology improves the quality of teaching	85%	15%
The institution provides sufficient training	42%	58%
They feel prepared to innovate digitally	60%	40%

The findings show that technological innovation in higher education is advancing rapidly, but it is not always accompanied by adequate institutional conditions to ensure faculty well-being. Although technology is viewed positively, its implementation creates tensions when there is limited training, support, and excessive workloads. This directly affects faculty performance, reducing their ability to innovate and interact effectively with students. In this regard, educational innovation must be understood as a comprehensive process that combines technological, organizational, and human aspects to ensure its quality and sustainability.

Conclusions

Based on the study examining the relationship between faculty well-being and educational innovation in the digital age, grounded in empirical evidence from higher education at the University of Guayaquil, the following conclusions were drawn:

This study leads to the conclusion that teacher well-being is a fundamental element for the effective implementation of educational innovation in the digital age within higher education, as it directly influences the quality of the teaching-learning process.

Evidence shows that the incorporation of digital technologies has contributed positively to the diversification of teaching practices, facilitating access to educational resources, interaction with students, and flexibility in educational processes.

It has been determined that this process of digital transformation has led to a significant increase in faculty workload, characterized by longer workdays and the performance of academic activities outside of established hours.

The level of stress associated with the use of technological tools is high, which directly impacts the emotional and professional well-being of university faculty.

There is a gap in institutional training processes, as a significant percentage of faculty members consider the support provided for developing digital competencies to be insufficient.

Educational innovation should not be understood solely as a technological process, but rather as a comprehensive transformation involving organizational, pedagogical, and human dimensions.

Finally, it is concluded that the University of Guayaquil, as an institution of higher education, must implement strategies that promote faculty well-being through continuing education, ongoing technical support, and policies regulating workloads, in order to ensure sustainable, equitable educational innovation centered on the members of the university's academic community.

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