

Transformative School Digital Sustainability Model to Improve Teacher Professionalism and Identity in Primary Education

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Abstract

To transform education, it is necessary to innovate in knowledge, identity, and teaching practice; that is why the teacher must conceive his pedagogical practice as a way to strengthen his professional identity and exercise his teaching work following trends and challenges of education, showing good preparation, developing research, using technology and reflecting on their teaching practice. In order to improve the development of teacher professionalism and identity (DPID), the sustainable digital model of a transforming school was applied, the design was pre-experimental of an explanatory type, a questionnaire was applied to 31 teachers from a school in Peru, taking into account the dimensions of teacher performance established in the Good Teacher Performance Framework (MBDD), the dimension where there was the greatest problem was chosen. By applying the model, it was possible to reverse the identified problem, increasing the high level to 67.74%.

Keywords: Digital model; teaching identity; professionalism; transforming school

Introduction

The teacher has a leading role in the educational process. Therefore, he must have good scientific and technological preparation. Currently, their pedagogical mediation must be carried out differently from the face-to-face modality, making it possible to engage with important ones, to develop learning skills virtually with their students, assuming new challenges, empowering themselves in the management of technological tools and the digital competence through the development of online courses, self-training, workshops, study circles, etc.

The development of professionalism must be linked to the evaluation of teachers, taking into account the educational context in which the teacher develops their pedagogical work [1]. In Iran, DPID is carried out by designing local programs that are tailored to the needs of teachers where contexts can facilitate the construction of the identity of teachers, not only those who are in service but also those who are in training [2].

We need an education in digital communication media for the 21st century; that is why incorporating technology contributes to achieving continuous improvement, being reflected in instructing in teaching and learning. Along the same lines, we agree with David Buckingham's statement, mentioning that if digital influences life, then digital must also influence teachers' professional practices. It is essential to transform schools with leading professionals in technological knowledge who carry out innovations. That research constitutes a permanent practice in their pedagogical work.

State of the art

In current times, digital technologies are immersed in various fields of life, highlighting their relevance in educational innovation through their integration, resulting in a range of different ways in which students and teachers access, engage in, and create knowledge [3]. Likewise, we must redefine their teaching methods with leadership models, and interaction channels, through digitization towards improving the sustainable development of their teaching [4]. Considering innovative education, the teacher must develop critical, creative, digital, and socioemotional skills to feel committed to playing an active role in social changes for a sustainable world [5].

Taking into account the aforementioned, it is of vital importance to promoting a transforming school, using digital tools and technology not only for pedagogical practice but also for teacher training [6] and thus promote the strengthening of DPID, generating virtual spaces of reflection and the use of digital technology for the sustainable development of their teaching work, with research and innovation being a constant in their teaching practice. In an investigation carried out in Malaysia, professional qualifications, experience and development were part of the teaching identity, having a direct impact on the curriculum [7]. Likewise, in Denmark, dimensions of the ethical perception of professionalism were analyzed, highlighting its importance and applicability in the formulation of policies, professional training, and education [8]. Furthermore, in Australia, being a professional and acting professionally proposes particular standards related to identity, practice, and the vocation and training of educators [9]. Also, the importance of involving educational actors in the planning and disseminating activity plans was demonstrated, highlighting the importance of collaborative work [10]. Finally, we contemplate professional qualities in adapting the content of educational work to students' personal characteristics and educational needs, highlighting the importance of technology in professional teacher training [11].

Proposal

The digital model of the transforming school is sustainable. Its purpose is to improve the DPID of Basic Education by using technology. It is based on the four pillars of education of this century published by Delors, such as: learning to do and learning to do. Be, learn to know, and learn to live together, considering the humanistic approach to education. This model presents a profile of the teacher of the digital transforming school who must be a leader, who promotes the strengthening of their interpersonal skills, their continuous improvement at a personal and institutional level, demonstrating solid knowledge, skills and attitudes, in addition to being a researcher critical, thoughtful and practical, that conceives research as a constant practice in the development of knowledge; In the pedagogical aspect, he must be a manager and generator of emerging pedagogical skills, an expert in content and learning environments, using technology in the student's environment and his relationship with the family, he must also carry out pedagogical innovation projects that allow the achievement of the learning in the students and that it collaborates to the progress of the educational quality. This model focuses on Siemens' connectivism, making it necessary to apply this new orientation in the social sphere represented by the generation of value through human intelligence networks to generate knowledge, setting itself up in a new context where technology fulfills a relevant role [12]. From this perspective, professional learning communities play a very important role in this model, as they seek to increase the efficiency and opportunity offered by the electronic space, offer and generate new educational spaces, channels of exchange, and participation; In addition, learning networks that are online learning environments will be taken into account,

allowing them to be competitive, sharing and collaborating information. In this regard, the learning networks are intended to enrich the learning experience in distance and face-to-face modality.

We apply ten sessions with various strategies where we reinforce the professional skills of the teacher through collaborative work, participating in workshops, and virtual learning circles. We apply the following technological tools: Regarding the collaborative work of the teacher, they were trained in the use of Office 365, Google drive; for communication: Zoom, Microsoft Teams, Meet; also to share files: Dropbox, Mega, WeTransfer; also for the development of the sessions: Easyclass, Remind, Socrative, Projeqted, Thing Link, Kahoot; in the same way for the elaboration of contents: Ted Ed, CK-12, Academic Google, EduClipper; for creating activities: Storybird, Ardora, Hopscotch; also for creating mind maps: Mindomo, Mindmeister and for creating infographics: Visual.ly, Infogram. Concerning the tools to strengthen investigative competencies, training was provided in the use of EduBirdie to detect plagiarism and bibliographic managers: Zotero, Mendeley. The digital tools in which we train teachers are free. We see the model in Fig. 1.

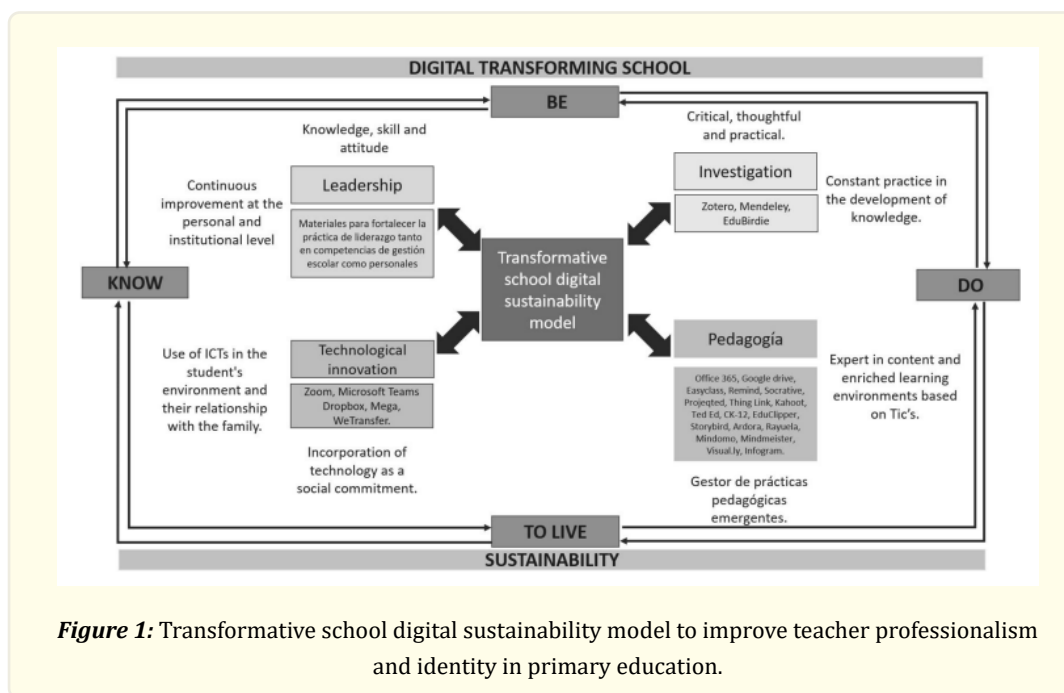


Figure 1: Transformative school digital sustainability model to improve teacher professionalism and identity in primary education.

Results and Discussion

In Table 1, we can see that 45.16% of teachers present a regular level in the pre-test, and after applying the sustainable digital model, 67.74% of teachers obtained a high level; which indicates that after the application of the sustainable digital model of a transforming school, the DPID increases.

Considering the results, we affirm that, to strengthen professional development, it is necessary to carry out workshops, courses on disciplinary content of the different areas or subjects to be taught, research experiences, internships as an opportunity for professional improvement [13].

	<i>Pre test</i>		<i>Post Test</i>	
	<i>fi</i>	%	<i>fi</i>	%
LOW	10	32.26	2	6.45
REGULAR	14	45.16	8	25.81
HIGH	7	22.58	21	67.74
TOTAL	31	100	31	100

Table 1: Results of the Dimension questionnaire: Development of teacher professionalism and identity.

Validation

To measure DPID, we elaborated a 17-item questionnaire based on four dimensions of the MBDD - MNEDU 2012: Teaching for student learning, Prefor student learning, participation in the school's management articulated to the mcommunity, DPID. In addition, we consider three items in each indicator: Promotes their professional training, undertakes postgraduate studies, participates in training and specializations. Then we validated through the judgment criteria of 3 experts, giving conformity to the questionnaire. The reliability was obtained using Cronbach's Alpha, resulting in 0.976.

We apply the sustainable digital model of a transforming school, which was previously validated through expert judgment.

Conclusions

In the beginning, in the pre-test, it was evidenced that the level of DPID was between low and regular. This could be evidenced through the application of the questionnaire, being ratified by the judgment of 3 experts, in addition to this, it has a high degree of reliability. Then, the sustainable digital model of a transforming school was applied, which generated an increase in the DPID, by 67.74% (good level) in the post-test. The proposed model allowed teachers to be a leader through their continuous personal and institutional improvement and being a critical, reflective and practical researcher, and in the pedagogical field, experienced in environments and learning contents supported by the Technological tools.

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