Use of Web Tools in University Students for the Elaboration of Their Own Learning Environments (PLE)

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This article highlights the importance of guiding the student towards the search for new tools that help him to fulfil tasks oriented to work and study. For this, a review of research articles that rescue active methodologies and the implementation of strategies by the teacher to guide students to autonomous learning is carried out. Among the objectives are: to define new ways of coping with a teaching methodology through a flipped classroom, identifying integrating activities that can be developed in a virtual environment to finally design evaluation activities that allow the student to self-evaluate and identify which it is your cognitive conflict and overcome it. The results are based on the coincidences and discrepancies of 11 articles that demonstrate the existing limitations. It is concluded that the responsibility lies with the students to take control and manage their learning.

Keywords: web tools, PLE, digital skills, self-directed learning

INTRODUCTION

It is necessary to guide both the teacher and the students in continuous self-motivation so that they can acquire learning that makes them more competent beings. This learning can be found at your fingertips with didactic methodologies such as PBL, forums, research with tutoring, and collaborative work. However,

there is an absence of reading habits that affects the investigation, since it implies a search for information; therefore, the student is required to contrast, analyze, and build texts, all of which will require a lot of time and effort. First, possibly, they will tire your brain, since it is not used to it; but, with practice, it will eventually become a habit. In this regard, if the teacher uses a methodology based on active tools, it will generate expectations and the development of positive attitudes around student learning[1].

The process that the individual must self-regulate their learning, become aware of their autonomy and resolve any internal conflict that does not allow them to solve a certain task was investigated. So, it's necessary to have the level of commitment necessary for the student to develop their skills[2].

This research becomes vitally important since its main objective was to propose a new way of guiding the student to create their learning environments, based on technological tools that, using them correctly, will be able to obtain the expected result. The teaching strategies encourage the attention, elaboration, organization, and abstraction of ideas from the content, guaranteeing a correct understanding and identification of the student about his interests[3].

Evaluation of Web Tools

On the other hand, to understand how the web has evolved and its impact on human learning for its development and institutions in general, it is necessary to highlight that digital platforms offer the main evidence of a much more autonomous transformation[4].

Web 1.0 showed, in its beginnings, a completely static page, the presenter had absolute control of the information he published. Quite the opposite of web 2.0 that, through social networks, invited the collaboration and participation of users in each business area[5]. So, web 3.0 is oriented to entirely virtual education, they also indicated that it differs from the two previous proposals because applications can be used that help users, in this case, students, to carry out tasks to create, update and use learning units corresponding to courses of their specialty[4]. In addition, it was demonstrated, through an educational application designed specifically for a course and implemented through a mobile device, how the institution can monitor the activities of the teacher and the student in functions such as registering, viewing, editing, and deleting questionnaires, tasks, attendance, visualization and download of the material, etc.[6] To demonstrate this evolution, the elements and characteristics have been synthesized in Table 1[7].

TABLE 1
EVOLUTION OF WEB APPLICATIONS IN 21ST-CENTURY EDUCATION

Web Applications 1.0	Web Applications 2.0	Web Applications 3.0	Web Applications 4.0
Non-digital materials	Use of tools 2.0	Digital Ecosystems (Tools / Contents)	Incorporates game and creation of real environments
Lineal	Hypertextual	Multimodal	Generate educational models
Static	Dynamic	Interactive and hybrid	Flexible
Content	Experience	Shared individual experience	Personalization of learning
Observation	Participation	Conectivism	Analyze data / Feedback
Objects	Projects	Action and innovation	Problem-solving capacity
Individuality	Community	Individuality among masses	Cooperation between student and teacher

Source: Perez and Tejedor (2016) *Manual de innovación educativa y tecnología*. Author's adaptation.

Digital Competence at the University

Educational teaching platforms offer their user public the opportunity to solve complex problems such as the correct filling of applications, forms, documentary procedures, admission exams, and online

enrollment; as well as access to job calls for pre-professional internships and study scholarships abroad. All through video tutorials, and application usage guides, along with an institutional username and password. But, despite the efforts of the institutions to digitally literate their external and internal public, they fail by not obtaining the digital competence that educational institutions demand.

Online education involves the use of a digital platform and applications, but, above all, a teaching staff adapted to the environment and with a high degree of digital competence. This means that the teacher must be able to create syllabi for new courses, learning assessment rubrics, and a whole range of didactic strategies adapted to learning based on case studies, PBL, and other types of learning that invite participation such as service-based learning, collaborative and autonomous projects.

In Peru, teachers' digital competences are not well defined, so the digital competence framework plan developed in Spain[8] must be taken as an example, where five competencies stand out, corresponding to what is indicated in Table 2.

TABLE 2
DIGITAL COMPETENCES DEFINED FOR THE TEACHER AND CONTEMPLATED IN THE INDEF FRAMEWORK

1	The user is informed and literate.	Identify Locate Recover Stores Organize Analyze	Digital information
		Evaluate	Purposes and relevance
2	The user communicates and elaborates.	Communicate	In virtual environments
		Share	Resources
		Connect Collaborate	With the chosen digital tools and custom
		Interact Participate	Communities and networks
3	The user creates own contents.	Create Edit	New contents
		Integrates	Learned things
		Reworks	Previous information
		Makes	Artist productions Content in different formats Program information
		Apply	Respect copyright Respect the use of their license
4	The user protects the information.	Apply	Save personal information Save data Save digital identity
		Uses	In a save way Sustainably

	Identify	New needs
		Digital resources you have
	Take decisions	Tool choice
5 The user solves problems	Solve	Conceptual problems
		Technical problems
	Uses	Technology
	Update	Competences

Source: INTEF (2017). Author's adaptation.

Importance of Creating a PLE

In the US, the report tries to resolve the question of what the university will be like at the end of the pandemic. After an exhaustive analysis of new trends in the use of emerging educational technologies, it was shown that the teacher is not the only source of information for the student. On the contrary, the image of the teacher has changed to become a content curator, a facilitator of learning experiences that guides students to obtain research habits and an education will be based on competencies[9].

The development of these types of spaces was shown as part of a flexible framework plan that helps the student to ask questions and challenges about future needs, based on a focused study with experts who discuss the new parameters of the educational transformation that is no longer limited. only to classrooms, but it is also in the interest of the public after a pandemic scenario[10].

As it is described in Table 3, the environments are individual and customized according to the user's needs. You can see an example of PLE oriented to teaching work, which classifies the applications used to carry out activities oriented to the originality of the didactic and dynamic material for the development of their class and that can be adapted by students to organize the applications. That will be used for the development of their learning.

TABLE 3
PLE PROPOSAL OF TOOLS AND RESOURCES USED BY THE TEACHER

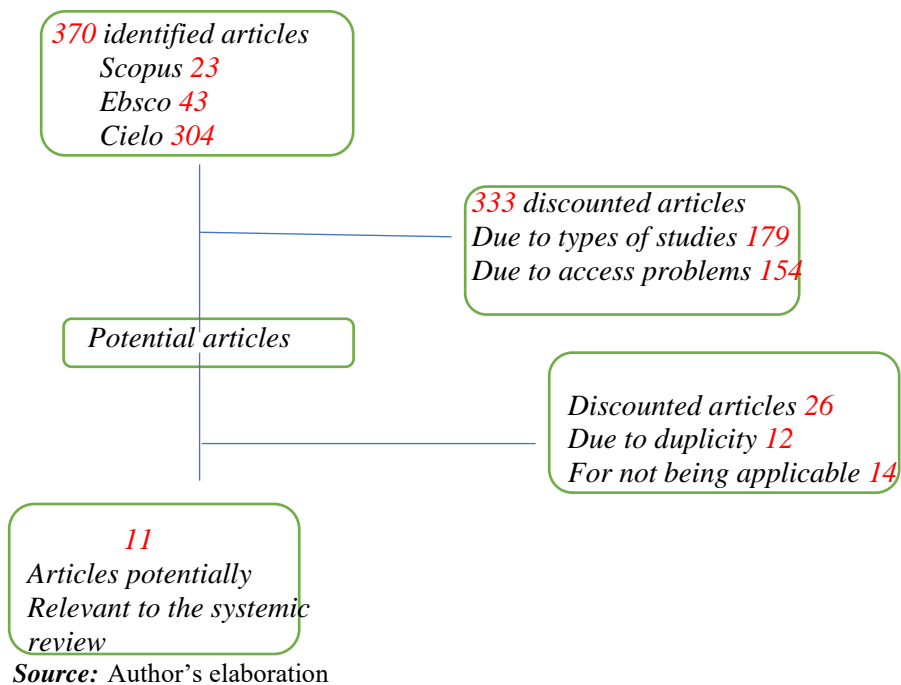| Planning	Elaboration	Development and evaluation	Monitoring
Learning-oriented applications	*Educational resources to carry out your own or reused self-assessment activities*	*Integrate digital strategies, tools, and resources*	*Feedback*
Google Drive	*Realizar contenidos*	Mindomo	Google Forms
Google Calendar	Google Scholar	Powerpoint	Typeforms
One drive	YouTube	Google Drive	Microsoft Forms
Dropbox	TED	Moodle	
	Google Books	Jamboard	
	Scientific articles	Mentimeter	
	Crear contenidos	padlet	
	Microsoft PowerPoint	Kahoot	
	Genial.ly	Zoom	
	Mindomo	Stremyard / Google Meet	
	Filmora		
	Reutilizar y crear actividades de evaluación		
	Jeopardy		
	Quizziz		
	Socrative		

Source: Author's elaboration based on Perez and Tejedor Manual, 2016.

METHODOLOGY

A heuristic methodology was used that, through observation and experience, reached an immediate and promising goal. The approach was exploratory and the chosen design was descriptive. For the procedure, an exhaustive and systematized review of documents was applied through the PRISMA statement that served as the basis to resolve the questions oriented to the relationship between the use of web tools and personal learning environments in students who are, at the same time, directed by the teacher, who is in charge of the work of creator and facilitator of new methodologies to strengthen the autonomous learning of the student[11].

In the search, articles were found in English (3) and Spanish (7), relevant to the research and belonging to the Scopus, Ebsco, and Scielo search engines under the following inclusion and exclusion terms: (teaching learning) + AND + (virtual platforms) + AND + (university students). The search range used corresponded to the years 2017 and 2021, respectively, in the following countries: Argentina, Colombia, Ecuador, Cuba, and Mexico.

FIGURE 2
IDENTIFICATION OF ARTICLES AND SELECTION PROCESS

370 identified articles
  Scopus *23*
  Ebsco *43*
  Cielo *304*

333 discounted articles
Due to types of studies 179
Due to access problems 154

Potential articles

Discounted articles *26*
Due to duplicity 12
For not being applicable 14

11
Articles potentially
Relevant to the systemic
review

Source: Author's elaboration

RESULTS

The results found several similarities, oriented to the concern that teachers have for encouraging students toward autonomous learning. Likewise, peer evaluation is a solid basis for defining strategies to improve the educational process from a virtual platform.

TABLE 4
RESULTS OBTAINED BY EACH AUTHOR

Digión, L.	In the search for autonomy in student learning, guidelines are identified, and pedagogical and didactic strategies are created for greater perfection in the educational process.
Prober, C. & Norden, J.	The construction of a community is achieved through joint work. Community building has a multitude of positive effects including giving students support network and a professional network and enhancing a diverse set of lifelong learning opportunities.
Reficco, E.; Jaén, M. & Trujillo, C.	Active learning and learning communities can be effective in distance education. Furthermore, a critical point remains the extent to which online education can go beyond knowledge and making components of education, to encompass the self-essential to building well-rounded leaders.
Salvado, J.	The importance of type of language that teachers use in their teaching; it influences the cognitive development of their students.
Salas, R.; Jiménez, C. & Alvarado, C.	Among the advantages of the Schoology platform, you can find: the ease in searching for information, the delivery of tasks, and the application of online evaluations.
Borgobello, A.; Sanjurso, L. & Sartori, M.	A current concern in the teacher is the constant search for motivational tools that encourage interest in the student to adapt to virtual education.
Manrique, B.; Zapata, M. & Arango, S.	Both the teacher and the students should aim to propose, produce and distribute educational resources, which they can share and at the same time develop a more enriched knowledge in common.
Rodríguez et al.	It is necessary to créate spaces for reflection, through the application of strategies that seek to promote communication, collaborative work between teachers and influence the family orientation that the student receives, when preparing their academic products at home.
Roque, Y.; González, L.; Suárez, A.; Fernández, A. & Gómez, M.	It analyzes several platforms that allow the development of MOOCs, to finally emphasize the Edx and Talent LMS platform for its pedagogical methodology.
Sanabria, P.; Ospina, M. & García, S.	Entrepreneurs and academics agree on the result of the development of their specific skills.
Espejo, R.; Romo, V. & Hervias, M.	A peer evaluation contributes to more effective educational practices at the higher level, generating better feedback.

Source: Author's adaptation.

DISCUSSION

According to the eleven potentially relevant articles chosen for the research, a comparative analysis was presented based on how the institutions support the teacher and the student in the management of the platform, and the use of virtual resources in their corresponding academic programs.

TABLE 5
OBJECTIVES SET BY EACH AUTHOR

Author	Objective
Digión, 2021	To program in students the active participation. Organize the learning achieved in students, to monitor.
Prober y Norden, 2021	Create a curriculum designed to prepare future doctors to meet the demands of the market.
Reficco; Jaén y Trujillo, 2017	Analyze business schools in Latin America, in order to evaluate them and recommend an education that prioritizes values.
Salvado, 2019	To determine if the educational process in teachers and students improves with the implementation of an entirely positive language.
Salas; Jiménez; Alvarado &Zamorano, 2021.	Analyze the impact of preparing an article as an integrating product in a subject oriented towards scientific research through the Schoology platform.
Borgobello; Sanjurso y Sartori, 2018	Analyze interviews where university teachers complement regular education and tell their new experiences as virtual teachers.
Manrique; Zapata y Arango, 2020	Implement an educational model, where open educational content is produced, with a qualitative approach.
Rodríguez et al.	Apply a teaching strategy for teacher training through a platform called Red Educa Familia.
Roque, Y.; González, L.; Suárez, A.; Fernández, A. y Gómez, M.	Establish the advantages of the relationship between MOOC courses and the objectives of the virtual learning.
Sanabria; Ospina & García, 2019	They review and analyze the academic and institutional documentation of professional development competencies, especially in administration.
Espejo; Romo y Hervias, 2021	Analyze the teacher training process, based on the experiences and perceptions they have, after having received the necessary training.

Source: Author's adaptation.

CONCLUSIONS

First

Aspects such as communication, security, and solving problems that arise given a specific situation are factors that can be strengthened through digital competence in students[12]. However, if this competence is not obtained, it is difficult to transform the information into knowledge, even more so if it consists of sharing new knowledge that has been generated as a result of an analysis and, in practice, in the use of these tools. It is a vital ingredient for collaborating with digital communities, social networks, and other digital platforms.

Second

For teachers and students to be able to direct and verify the utility that digital tools offer, they must identify the function that each tool plays to meet the needs of their professional environment and strengthen their study habit, keeping in search and implementation of new technologies that will make him an increasingly competent being.

Third

Finally, access to the required information search and the use of different types of devices is not a problem in commercial activities; for example, when buying and selling products; but it is a problem when it comes to creating quality content and processing information. The challenge for digital natives is to

produce and manage professional-level content, not just use digital tools for consumer purposes and not at all educational[13].

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