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REVIEW

Training and emerging technologies: Towards a new pedagogical paradigm

Capacitación y tecnologías emergentes: Hacia un nuevo paradigma pedagógico

Rodrigo Nahuel Pastrana[1], Teresita Jalil[1]

[1]Universidad Siglo 21, Carrera Licenciatura en Educación. Cordoba, Argentina.

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ABSTRACT

Introduction: the study addressed shortcomings in teacher training at the Santa Ana Institute, specifically in relation to the incorporation of innovative technological tools such as artificial intelligence. It was based on the diagnosis that many teachers still applied traditional teaching strategies that were out of touch with the needs of 21st-century students, which limited the development of meaningful and relevant learning.
Development: from a constructivist approach, training was proposed that focused on the use of the artificial intelligence tool Sendsteps.ai, with the aim of promoting dynamic, collaborative, and interactive teaching practices. Through this technology, teachers could design more attractive presentations tailored to the realities of their students. Contributions from authors such as Vygotsky and Bates were integrated to theoretically support the need for methodological transformation. The flipped classroom methodology was also highlighted as a key strategy for empowering both teachers and students in the construction of knowledge.
Conclusion: the study concluded that continuous teacher training was essential to achieve teaching-learning processes consistent with current challenges. The implementation of AI-based technologies would not only improve teaching practices but also encourage student participation and retention. The proposed training sought to transform the role of teachers into a more active, reflective and innovative one, enabling them to deal with change effectively and promote an educational environment adapted to the digital context.

Keywords: Artificial Intelligence; Teacher Training; Flipped Classroom; Sendsteps.Ai; Educational Innovation.

RESUMEN

Introducción: el trabajo abordó las falencias en la formación docente del Instituto Santa Ana, específicamente en relación con la incorporación de herramientas tecnológicas innovadoras como la inteligencia artificial. Se partió del diagnóstico de que muchos docentes aún aplicaban estrategias didácticas tradicionales, descontextualizadas de las necesidades de los estudiantes del siglo XXI, lo cual limitaba el desarrollo de aprendizajes significativos y pertinentes.
Desarrollo: desde un enfoque constructivista, se propuso una capacitación centrada en el uso de la herramienta de inteligencia artificial Sendsteps.ai, con el objetivo de fomentar prácticas pedagógicas dinámicas, colaborativas e interactivas. A través de esta tecnología, los docentes podrían diseñar presentaciones más atractivas y ajustadas a las realidades de sus estudiantes. Se integraron los aportes de autores como Vygotsky y Bates para sustentar teóricamente la necesidad de transformación metodológica. También se destacó la metodología del aula invertida como estrategia clave para empoderar tanto a docentes como a estudiantes en la construcción del conocimiento.
Conclusión: el estudio concluyó que la formación continua del profesorado resultaba indispensable para lograr procesos de enseñanza-aprendizaje coherentes con los desafíos actuales. La implementación de tecnologías basadas en IA no solo mejoraría las prácticas docentes, sino que también incentivaría la participación y

permanencia estudiantil. La capacitación propuesta buscó transformar el rol del docente hacia uno más activo, reflexivo e innovador, permitiéndole enfrentar los cambios de manera efectiva y promover un entorno educativo adaptado al contexto digital.

Palabras clave: Inteligencia Artificial; Formación Docente; Aula Invertida; Sendsteps.Ai; Innovación Educativa.

INTRODUCTION

Through the following work, we want to respond to the shortcomings that represent the Santa Ana Institute regarding the lack of training in teachers around the implementation of newly updated resources linked to Artificial Intelligence Sendsteps.ai (ICTs), assuming that teachers within the institution continue to develop practices, didactic and pedagogical, which although they are connected to ICTs were designed in a previous context and no longer meet the needs expressed by students today because we are in a knowledge society closely related to technologies that are promoting a renewal of knowledge constantly, so we must encourage teachers of the 21st century to train continually to meet the expectations or needs presented by the various educational contexts.[1]

We also want to emphasize the importance of innovation in the educational field, demonstrating the benefits of its implementation in academic institutions. To facilitate this evolution of pedagogical practices, we will emphasize the use of ICTs as a transversal resource that promotes collaborative work within the institution, aiming to achieve greater results and progress in the teaching-learning processes.[2]

Through training, teachers will be encouraged to become aware of the various digital and free tools we have on the network. To promote a process of content transmission more adapted to the needs of students, involving them in collaborative work, both teachers and students will develop knowledge in an articulated and coherent manner. With this work, we also want to establish the change that took place in education regarding the role of students, going from being furniture students, i.e., mere receivers of contents and reproducers of them, to active students in their learning process, who develop their methodologies and strategies to learn the contents practically with the implementation of ICTs. Additionally, from another perspective, it will encourage autonomy among students, making the connection with the working world less complicated for them. As mentioned by Bates, "Education and the use of technologies for teaching and learning are driven, once again, as much by context, values, and beliefs as by scientific evidence or rigorous theories" .[3]

Through this training, we aim to establish the needs and importance of learning for teachers and institutions to adopt updated methodologies. To carry out an effective teaching process according to the current needs represented by the students and thus achieve an effective link in the educational proposals and promote participatory, coherent, and innovative instances within the institution. Where the different educational actors feel attracted to participate and contribute to their cognitive development, as well as to the maintenance and evolution of the institution.

DEVELOPMENT

The following work will develop the linking of updated ICTs within the educational field, emphasizing mainly the implementation of Artificial Intelligence Sendsteps.ai as an appropriate resource, which will represent great benefits for teachers in their academic practices through the implementation of new teaching resources promoting collaborative and active participation by the different teachers in the institution. Mentioning that the use of new technologies, such as Artificial Intelligence Sendsteps.ai, will mean a substantial advance in the teaching and learning processes developed because it is configured as a tool to help build or shape teaching tasks innovatively and practically, encouraging the transmission of content.[4]

The work will be developed from social constructivist approaches, representing the construction of knowledge in the different teachers attending this training in a joint, systematic, collaborative, or individual way. We will utilize the concept established by Vygotsky (1978): "On the zone of proximal development, referring to the space or gap that is generated between the skills that teachers possess and those that they may acquire."

With the help of this training on the use and linkage with ICTs within the educational field. As the author mentions, we will resort as a starting point to verify what knowledge the teachers have because the Santa Ana Institute has a link with ICTs; after performing the analysis, we can determine from what resources or actions to begin to develop or establish the theme of work that is the Artificial Intelligence Sendsteps.ai as a resource.

From another point of view, the authors Bulbules[5] mentioned: these new technologies not only build a set of tools but also an environment, a space, a cyberspace, in which human interactions take place. Mentioning that the Internet is increasingly a context in which interactions occur that combine and intertwine activities of inquiry, communication, construction, and expression, they describe the network as a "public space," a place where people meet to discuss and promote the acquisition of knowledge, as well as the transmission of

knowledge in a practical way, seeking solutions and innovations to improve educational practices.

According to what has been established by the authors, we can observe that more and more technologies form a fundamental part of our daily activities. In this way, it becomes necessary for teachers to continue training continuously around the new resources that are being produced, for example, Artificial Intelligence.

Artificial Intelligence

It is a field of science related to the creation of computers and machines that can reason, learn, and act in a way that would typically require human intelligence or involve data whose scale exceeds what humans can analyze.[3]

AI is a broad field that encompasses many different disciplines, including computer science, data analysis and statistics, hardware and software engineering, linguistics, neuroscience, and even philosophy and psychology. In this context, AI represents a set of technologies primarily based on machine learning and deep learning, which are utilized for data analysis, prediction and forecasting, object categorization, natural language processing, recommendations, intelligent data retrieval, and many other applications.[4]

Thus, we can see how Artificial Intelligence technologies represent a breakthrough in both the educational and social fields. When used correctly, they represent a fundamental tool for implementing them in various media that may arise. In the academic field, AI is established as a valuable and substantial resource for teachers to develop their educational practices in engaging and interactive ways linked to the construction of knowledge in a participatory manner. This approach will help shape students as active and interested participants in the creation of their knowledge and learning.[5]

The Artificial Intelligence that we will emphasize in this training refers mainly to the use of the Sendsteps.ai application as an appropriate resource for teachers to plan their classes dynamically, encouraging curiosity in students.[6]

The Sendsteps.ai Application

It is an AI presentation creator designed to assist students and teachers in creating interactive and engaging presentations for academic purposes. It will develop papers ten times faster with presentation creators provided by AI; it is a tool that streamlines the presentation creation process, making tasks easier and more efficient. It offers interactive features that enhance student engagement, encourage collaboration, and create visually engaging presentations.

We can see that it is essential that teachers are constantly training to develop their educational practices effectively and put into action the implementation of Artificial Intelligence in their classroom activities because they will represent a didactic opening on how to work in this knowledge society, which is constantly advancing, generating the development of new strategies and alternatives to be used within the institutions. As mentioned by Cukierman[7], "the interaction between these elements, technology, information, and communication are those that are integrated to define ICTs as those technologies that facilitate activities, as well as access to information, regardless of their type of characteristics". For this reason, teachers need to be connected to these elements and attentive to the innovations being developed in these areas to possess the appropriate knowledge and stay updated on the needs that may emerge in the context as a result of their evolution.

Innovation in education should be understood as a process of paradigmatic change that implies not only introducing a new product or model but also transformations in conceptions, as well as in mentality, and, above all, educational practices. The educational act will seek to develop the process of content transmission interactively. This innovation will enable teachers to effectively link academic content to the use of innovations established by the IA, promoting an efficient transmission of content tailored to each student's contextual needs and circumstances.[8]

ICTs provide tools such as AI

These refer to various alternatives for teachers to develop their practices more coherently in response to current needs, thereby encouraging the creation of collaborative work among different teachers within the institution. This involves sharing debates, ideas, and resources and building a collective knowledge base to drive innovation. In this way, it is essential for teachers to continually train as a means to keep pace with the significant innovations arising from technological advancements.[1]

Continuous teacher training is that which enables the development of pedagogical competencies inherent to professional practice; it is an indispensable element for the ongoing improvement of educational practices. Continuous training is conceptualized as a systematic, consistent, and organized process in which in-service teachers participate individually or collectively in reflective training processes, promoting the development of professional competencies.[3]

We can establish that a teacher, who is constantly trained in search of new knowledge linked to ICTs, will be able to use the various resources provided by AI, such as the Sendsteps.ai application, and will be able to

generate active learning experiences for their students by experimenting and building new didactic practices to encourage students to become active and participatory in their learning process. In addition, to carry out the above-mentioned teacher training, the inverted classroom methodology will be utilized as an innovative resource, providing us with the necessary tools to work and promote teachers' assimilation of the knowledge supplied temporarily.

He defines it as a pedagogical approach in which direct instruction is shifted from the group learning dimension to the individual learning dimension, transforming the remaining group space into a dynamic and interactive learning environment where the facilitator guides students in applying concepts and engaging creatively with the course content.[5]

The use of this innovative learning methodology offers several advantages when promoting classroom activities. For example, the flexibility it provides regarding the time in which activities are to be developed, as school actions limit them, represents a common obstacle faced by teachers when performing their tasks. With the implementation of this methodology, the times become wider because the teacher is configured as the guide of the student's learning process. Giving them the freedom to use the necessary tools and resources promotes their learning in the way they consider most effective, allowing them to comply with the required deadlines for their presentation. Another fundamental advantage of this resource is that it encourages active learning, providing learners with the opportunity to apply their interests and motivations to seek appropriate solutions to the situations that arise, thereby promoting critical reflection and creativity through the practical application of their acquired knowledge.[6]

The inverted classroom offers the possibility of personalizing the learning process, with learners taking charge of thinking for themselves. This approach allows them to plan the times they will use to carry out these activities, the resources they will utilize, and the strategies they will employ. They manage to organize their learning process in a way that is most convenient for achieving their objectives.

Thus, methodology is an innovative resource for classroom actions. Its main objective is to promote self-esteem and autonomy, enabling learners to take charge of their learning process in an individual, coherent, and effective way, one that is genuinely interested in their training.

The implementation of this methodology requires specific requirements from the trainees so that it can be used appropriately. For example, to be effectively implemented, commitment and self-discipline are crucial factors because, through this methodology, the responsibility for learning is placed in the hands of the trainee. The learner will need to organize their time, resources, and activities to promote the construction of meaningful learning, thereby assimilating knowledge in a lasting way rather than a fleeting one.[9]

Using this methodology, we will work on the corresponding training, providing the necessary tools so that the teachers within the Santa Ana Institute put into practice the use of Artificial Intelligence Sendsteps.ai from the realization of presentations on how they would plan and implement their classroom practices in an interactive way, where the student is configured as the relevant axis of the learning process. Through the use of this application, we will also encourage the creation of project presentations that link the various teachers to work collaboratively and articulate presentations on general topics developed within the institution, such as the realization of patriotic events.[8]

For these reasons, we can mention that it is becoming increasingly necessary to train teachers about ICTs and especially about the updated resources provided by AI, as tools that play a crucial role in ensuring the implementation of innovative resources in classroom practices, seeking to obtain the most excellent possible efficiency in the processes of content transmission and in guiding teachers to obtain the necessary tools to carry out their activities in an innovative way, assigning a central role to technological resources within their practices, especially to those technologies which are linked to AI as an updated innovative resource.

The Educational Policies Denomina 2030

They give a more preponderant role to technologies and to the updates that are constantly emerging in the process of linking them to the educational field. It is intended that teachers put into practice their autonomy, creativity, and interest in building their learning and acquiring the necessary tools to implement them in classroom activities. This encourages the creation of interactive presentations that emphasize the production of active methodologies. Configuring their students as conscious participants in their learning process, enabling them to face various situations appropriately, and recognizing that some situations are complicated, they must be able to obtain specific solutions. As mentioned by Bates, "education and the use of technologies for teaching and learning are driven, once again, by context, values, beliefs and scientific evidence or rigorous theories". For this reason, teachers must be able to innovate, create, and think critically about ways to solve specific problems that may arise in an appropriate, agile, and innovative manner. With this teacher training, we aim to instill in teachers the need to remain constantly connected to the educational field, enabling them to analyze, observe, and experiment with the development of innovative and attractive educational practices for students. One of the most significant current problems in academic institutions is the high rate of students dropping out

of school.[9,10]

Through this training and new AI technologies, teachers must acquire the necessary resources to innovate and create attractive, interactive proposals for students, thereby encouraging curiosity, the desire to learn, creativity, and the courage to propose new ideas without fear of being wrong. Through this, we aim to promote the permanence of students in the educational field and be responsive to the current needs that reflect the current educational context.

CONCLUSIONS

The present work has allowed for evidence of the urgent need to transform pedagogical practices within the Santa Ana Institute through the incorporation of emerging technologies, such as Artificial Intelligence, particularly through innovative tools like Sendsteps.ai. Throughout the project's development, it became clear that the current educational context requires teachers to prepare not only in disciplinary content but also in updated methodologies that respond to the challenges of a highly technological knowledge society.

The primary focus of the proposed teacher training was strengthening digital competencies through the use of ICTs, enabling teachers to plan and execute more dynamic, participatory, and contextualized classes. It was emphasized that the integration of AI in the classroom should not be limited to the instrumental use of tools but should promote a profound transformation in pedagogical conceptions, in the roles of teachers and students, and in the ways knowledge is constructed. In this sense, the inverted classroom methodology was also addressed as a key strategy to foster students' autonomy, self-regulation, and creativity.

Likewise, it was pointed out that technological changes have reconfigured learning environments and forms of human interaction, which is why continuous teacher training was positioned as an indispensable factor in guaranteeing educational practices in line with contemporary demands. The work adopted a critical stance towards traditional pedagogical models that persist in many educational spaces, proposing instead a proactive and innovative approach focused on ongoing updating and professional commitment.

The use of Sendsteps.ai was presented as a concrete opportunity for teachers to enrich their classes, encouraging collaborative work and student interest, thus reducing factors such as school dropout and academic disinterest. This tool not only accelerated the design of didactic materials but also strengthened the teacher's role as a guide to learning rather than simply as a transmitter of content.

Ultimately, it was concluded that educational innovation should not be viewed as a fad but rather as a structural need that necessitates reviewing, rethinking, and redesigning school practices in light of the current context. Therefore, this work reaffirmed the importance of teachers becoming active agents of change, capable of articulating pedagogical and technological knowledge with social sensitivity, creativity, and critical thinking. Only in this way will it be possible to build an inclusive, participatory, and quality education in which both teachers and students can play active, meaningful, and coherent roles with the challenges of the present and the future.

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CONFLICT OF INTEREST

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Research: Rodrigo Nahuel Pastrana, Teresita Jalil.
Writing - original draft: Rodrigo Nahuel Pastrana, Teresita Jalil.
Writing - proofreading and editing: Rodrigo Nahuel Pastrana, Teresita Jalil.