

AI-Powered Situated Learning: Challenges and Opportunities in the New Mexican School

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The Paris Conference on Education 2025
Official Conference Proceedings

Abstract

Education in Mexico is undergoing a profound transformation, moving from a traditional, passive and repetitive model towards a more humanistic, integral educational paradigm focused on the learning of students and the development of community environments. This transition on the educational model is no longer an isolated approach to the real and territorial conditions of the different schools and their educational agents, it's consider a process in construction and flexible called the New Mexican School (NMS or NEM). This proposal is based on article 3 of the Mexican Political Constitution, from a theoretical and pedagogical framework such as the epistemologies of the south to the decolonization of knowledge and power structures, as well as the indignations and contradictions of society against the devices of control, as education came to be. This new socio-educational model proposes that teachers from their initial training in the Normal Schools (public teacher training schools) to their continuing training (in service) should base their reflective practice on elements such as professional autonomy, authentic curricular integration and territoriality. School as a center for community development and education as a right. It is also intended to strengthen holistic development from the individual, but always thinking as a collective, encourage curiosity, inquiry, critical reflection, gender perspective, respect of community-ancestral knowledge and the responsible integration of New Technologies of Information, Communication, Teaching and Learning (NTICTL or NTICEA) as Generative Artificial Intelligence (GenAI).

Keywords: artificial intelligence, New Mexican School, educational technology, new technologies of information, communication, teaching and learning, human capabilities

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Introduction

The inherent emergence of New Technologies of Information, Communication, Teaching and Learning in different areas of daily life has transformed how community reality is conceived, the processes of interaction between people, the socio-economic models, and thus the educational systems, whose purpose is to go beyond the processes of administrative simplification, by focusing on the integration of technological innovations into teaching and learning processes.

Normal Education in the State of Michoacan, in México, through the official normal schools and the responsibility of the educational authorities has made it possible to meet the challenges of training new generations of teachers in basic education, which has marked a historic milestone during the 2023-2024 and 2024-2025. Currently, there is a concern of the teaching staff and the other educational agents of the institutions against the radical changes posed by the integration of the New Mexican School and Artificial Intelligence as an integral and flexible educational project.

Cooperation and coordination with experts in the field is essential to empower learning communities towards the initial training of fourth-grade academics and micro-classrooms practitioners for the strengthening of the various educational intervention through courses, workshops, seminars, colloquia and study circles, with the aim of integrating into their educational intervention projects and didactic planning a hybrid model between the digital world and the potential of the humanistic approach of the New Mexican School.

Figure 1

Workshop With Practicing Teachers of the Benemerita y Centenaria Escuela Normal Urbana Federal Prof. J. Jesús Romero Flores



Education policies must foster the convergence of new technologies within and outside their transformation processes, as well as revolutionary or cutting edge technologies converge in our daily lives, in the way we communicate, the way we transport ourselves, how we cook, including how we think. It is necessary to channel this progress into our classrooms; and at the right time education will have two important transformations possibilities: teaching and learning from an approach of educational excellence to reinvent the design and elaboration of class plans, physical and digital materials, as well as the ongoing evaluation processes. Community members will also be responsible for co-building guidelines for the monitoring and evaluation of their knowledge, human capabilities, knowledge, Learning Development Processes (LDP or PDA), with the aim of transforming the reality in which they are immersed.

The Challenge of Disruptive Innovation in Education: Opportunities and Challenges

The New Mexican School involves a process of training not only students, but also the pedagogical practice of teachers who exercise the profession, as well as those and future teachers that the normal school delivers to society each school cycle. Therefore, as the first aspect between the dialectic of humanism and technological innovation is to carry out the “Reading of Reality” with a critical awareness, where the Needs, Interests and Problems (NIP) of different communities are recognized. This milestone breaks the traditional paradigm where teachers repeat an “educational market” that has a single purpose on producing efficient beings loyal to the interests of industry or the market, but with little or no critical awareness of its reality.

This is why Diamandis and Kotler (2021) claim that government agencies (such as the education system) are not prepared for the exponential advances implied by the technological revolution, since they were designed for another century, with other goals and objectives. His eagerness to remain in the “moments” or “golden times” perpetuates his immovability. In Mexico, it is common to hear that the education system has aged, and practices to rejuvenate them in the face of the current times are light breezes in the face of the hurricanes of the perpetuity of neoliberal systems. However, the implementation of vocational autonomy has led to the creation of “non-formal” and “informal” groups of teachers who, in their desire to develop a professional practice, and not just a repetitive educational practice, come together to talk collectively, to propose the needs, interests or problems of their schools with a view to making proposals for action where their peers act as an engine for change and integration into a wider network of professional cooperation; In particular, advances in new technologies.

We cannot continue with an educational system of the eighteenth century, educational spaces and classrooms of the nineteenth century, teachers with vocational training of the twentieth century, students of the twenty-first century and technological and digital resources of a premature twenty-second century. This is why the teachers are a source of transformation and mobility of the education system, “being in the time and for the time that runs” (Freire, 2024, p. 36) the change in educational paradigms, where new technologies converge and the Project of Educational Intervention they are conceiving, allows a worldview of an educator-critical, political and technological cooperation between the members of communities and educational agents in the social interweaving of knowledge and know-how.

Figure 2

Presentation of Educational Intervention Projects Contextualized and Supported With the Use of Generative Artificial Intelligence



The integration of Generative Artificial Intelligence into initial training processes in normal schools provides undeniable advantages alongside the approach of the New Mexican School, since it allows a co-creation of knowledge and skills when designing and developing projects, from the reading of their reality and the contextualization of the contents and PDAs of the synthetic programmes which are integrated in training fields at different stages of education; to create a professional and authentic pedagogical experience, not generic or instructive as traditional models have demonstrated in past school cycles.

This contextualization implies strengthening the professional capacities of curricular autonomy as a axis of NEM in order to design educational intervention projects that respond to cognitive, socio-affective, physical and motor, social, economic, the local, state, national and international levels of education and to relate them to their experiences in the environment.

Figure 3

Workshop: Beyond the Chalkboard - The Power of Artificial Intelligence to Transform Teaching and Learning



The co-design, together with the opportunity of “increased” innovation through AI, provides a point of convergence for incorporating “relevant” and “new” content which is not found in synthetic programmes, where active participation, conscious and decision-making by the educational community (teachers, students, parents and other actors in the environment) enables teaching and learning to be transformed through a pedagogy centred on the transformation of reality, and their emancipation from power structures or figures, since “there would be no culture or history without innovation, creativity, curiosity, freedom exercised or freedom to fight when denied” (Freire, 2024, p.36).

Normal Education at the Forefront: Exploring the Possibilities of Integrating New Technologies Into Initial Training

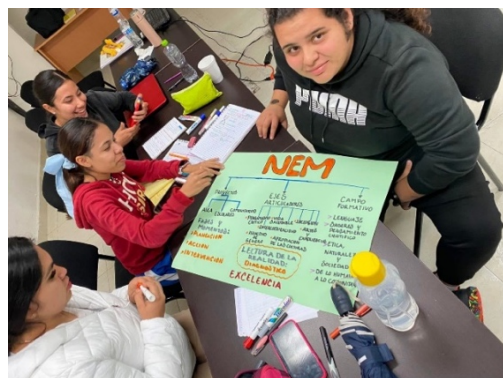
The origin of the Normal Schools in Mexico, arise in the eighteenth century with the Lancasterian company as a pedagogical innovation, although with a simple approach, beyond to train technical specialists in aspects of basic education, It aimed to integrate future students into the school system in rural and urban environments, under a scheme of mutual support between peers, where they would form a sense of identity, responsibility and transformation of their environment with a humanistic and social vision. From the following years, normal education went through a process of professionalization as an institution, but also on its meanings and values towards development and liberation, especially in rural environments.

However, the pressing scientific and technological modernization of the nineteenth and twentieth centuries brought about a crossroads and an awakening of consciousness of normalism in Mexico to meet the challenges of new learning and teaching practices, in order not to maintain archaic systems of “intellectual” domination as they had been decades ago, but to challenge the etymological and functional notion of knowledge, as well as its obscure meaning, oriented towards predesigned, fixed and submissive responses, “Pedagogy of Liberation”, as Paulo Freire has already said.

It is for this reason that the vision of humanist-scientific-technological normalism in comparison with the ages of GenAI, the overcoming of the cruelties of progress which has threatened education and has slowed down the integral development of some educational intervention projects for teachers and teachers who are practising in normal schools; that they could return to the golden ages of normal education, but that due to ideological and materialistic gaps prevent the success of this revolution, but do not limit the idealism for its implementation against the desire to innovate and evolve curricular structures of study programmes, as true revolutions throughout life, Where should I ask? What do I have to do to meet the challenge of incorporating the technological revolution into my educational intervention project? How can I adapt my initial training as a professional in the normal education to artificial intelligence? What do I hope to know and learn in order not to encourage ideological and materialistic gaps in the face of new technologies for teaching and learning?

Figure 4

Workshop: Design and Elaboration of Conceptual Maps and Digital Materials With the Support of Artificial Intelligence With Practicing Teachers From the Escuela Normal De Educación Física



The different activities of training complementary to the curricular framework on new technologies and GenAI has led both teachers in normal schools, and future teachers to develop a dialectical synthesis of knowledge and capabilities to be developed from the individual, empirical and reflexive on the pedagogical practice of the education professional (intrinsic process), its implementation, communication and interaction of his project with his colleagues and fellow teachers (extrinsic process) and its potential for transformation, liberation and emancipation of the students and community members so that everyone is an enhancer and creator of knowledge, content and materials, with the aim of carrying out a hybrid training and dialogue process in normal schools by building learning communities, through workshops, seminars, lectures, conferences, dissemination and dissemination articles, digital resources, participation in congresses, colloquia and forums with the aim of fostering exchange and facilitating the exchange of ideas through active listening.

The teachers and practitioners of academies and micro-classrooms are reinventing themselves in their professional aspect due to the hyperconnectivity they find themselves in through the different social networks and the ease of connection points to the mega-network or online knowledge networks; from this process arises the opportunity for self-training of pedagogical practice, since by means of videos, “papers” (specific academic, scientific or technological articles), post and recommendations analyse and incorporate technological innovations into their professional foundations in a non-formal and informal way, but with a high socio-cognitive value to have the possibility of understanding the world that is being constituted socially and historically in front of their eyes.

As mentioned by the South Korean writer Byung-Chul (2010) as education professionals we must learn to look significantly at our reality, to accustom the eye to look with calm and patience at these new changes and cinematics that might seem unreal as a priority for human and spiritual development. The NEM proposes the construction of a critical pedagogy of the use of AI, focused on the development of slow and deep thinking in front of automation from the first childhood and Initial Training through surprise and curiosity. This new pedagogy enables future teachers not only to fill spaces, places or job placements in different schools, but also to share experiences of the use of new technologies, some important challenges for “humanizing” and “territorializing” in accordance with their professional universes, to avoid robotized and over-digitalized practices, as opposed to proposals that can be considered in real contexts and become part of the formal curriculum, the ability to be independent in their profession, as is the case with normal schools.

Figure 5

Workshop: Recovery of Learning Experiences From Educational Practice by Practicing Teachers



In the face of the accelerated self-training of normal school students, normal schools are faced with a challenge to connect the reality of educational communities or practice universes through socio-educative diagnosis, the role of NEM as an educational paradigm managing knowledge through projects from the classroom, school and community scenarios, and the implementation of technological tools such as GenAI to link what was previously impossible to relate, to make these technologies accessible, replicable, reproducible and usable for generating knowledge and know-how, solving everyday problems, innovating and realizing mistakes, not to eliminate them but to know their reasons, quality and prevent them in the future.

In order not to increase these gaps in education it is necessary to reflect and question its essential hybrid role on teaching and learning, not as a tool but as a cognitive mediator that

favours reflective processes, collaborative and personalized in basic and normal education, respecting the socio-cultural approach of knowledge. The new technologies provide an opportunity to break traditional patterns which, out of a fear of “what will they say”, are rejected or discredited such as “that does not work”, “it is a fad”, “it will replace my profession” or “it is forbidden within the school”, in the face of new opportunities for linking GenAI, which not only passively transmit or “copy” information, but also “generate” multidirectional communication in different formats or schemes that allow educational actors to act “boldly” In the face of their innate curiosity, encourage their own judgement, reasoned and argued, and actively participate in the “rediscovery” of educational practice.

The technological reinvention from the educational approach in the normal schools implies a reflection on the technological paradigm that supports necessary guidelines for the individual together with his “technological and digital cooperation” denote that information is the primary matter, not only data or references, but also means of construction itself and knowledge, the model of society ad hoc to new technologies, a society that has adapted to the technological needs which they demand of society; is in this area, where we must make a greater analysis,

The Technological Legacy of AI Facing the Challenge of Innovation

The new technologies not only acts as online, immediate or consumer information, but they are the means or tools by which everyone becomes creator of new content through technologies and is co-creator of them. More, however, the traditional paradigm in the framework of education carries a progressive vision, of establishing bridges between the socio-cultural and historical moment in which we find ourselves facing the challenge of the digital age. Teachers in Basic Education are a step away from working hand-in-hand with AI agents, that is to say, customized, territorialized and “sensitized” AI models to the NIP of different communities with all the ethical and the legal implications of this, it is for this reason that the establishment of a link between reality reading and technologies to enhance educational intervention projects involves “the use of Artificial Intelligence to facilitate innovation in teaching and learning, drawing conclusions from successful cases and expanding practices based on empirical data” (UNESCO, 2019, p. 33).

Figure 6

Workshop: Learn How to Create Situational Learning Experiences Using Artificial Intelligence in Special Education



Under this premise, it is necessary to strengthen learning communities within basic education schools and normal schools to share the different advances and/or progress, formal, informal or non-formal learning should be acquired in a creative and critical way with regard to the role of technology in initial training and in everyday pedagogical practice. It is necessary for teachers to take preventive measures against the disruption of their educational practice in the framework of technologies, in order to avoid self-exploitation by the excessive pedagogical and administrative burden between the transition from traditional to innovation, as well as the deep boredom. It is essential that initial education programmes in normal schools include specific content on the use and management of Artificial Intelligence and its application in the educational process, with the aim of facilitating co-construction of new learning and thus reaching the human capacities that teachers and practitioners require to consolidate their profile characteristics.

Conclusion

The construction of the New Mexican School by the different educational agents implies an alliance between technological innovation and critical practice that is erected as a transversal axis of the educational transformation in the different territories. The use of Generative Artificial Intelligence by teachers, students and the community cannot be naively assumed as simply a tool or a fashion. On the contrary, GenAI poses a deep question about the processes of subjectivation in working with these innovations. Retaking a reconfigured idea of Jacques Lacan (2008) on these modern times we must reflect, although we know that these machines with which we live do not think -they are human creations repeating what has been said to them. What is unsettling is not their automatism or predesigned responses, but our thinking about them. If we claim that these machines reproduce logic without consciousness, What does this reveal about us, when we teach and learn without questioning, repeating schemes, operating under standardized formulas, obeying protocols as automata of the system?

This lacanian paradox becomes essential in the contemporary teaching task. The GenAI must not only be integrated as a functional tool, but understood as a mirror that returns to education its greatest challenge: returning to thought, to the subject, to the question of meaning. Critical educational practice, then, cannot be limited to operating devices; it must create conditions of indignation as already mentioned in the same way by Freire (2024), as well as a struggle and revolution of consciences for the democratization of these machines so that the pedagogical act recovers its ethical, critical and symbolic dimension. Because if the machine does not think, and we do not think when we act like it, the task of the teacher in this new school is precisely to break that cycle of automatisms, recover the word, interrupt the repetition, and open spaces for desire, the difference and true invention.

In conclusion, GenAI represents an opportunity for the transformation of Normal Education, to strengthen the dialectic about teaching and learning; however, it requires a management and treatment with “high” degree of responsibility, ethics and professionalism, it can be seen as a step backwards in the processes of pedagogical reflection or as a simplistic formula for the design of didactic planning. The teachers and practitioners of the normal schools are transforming their role as agents of change by developing human and digital skills necessary to contribute to build an innovative, inclusive, critical and dialogical New Mexican School, where the unusual, novel or different is not a reason for rejection or devaluation within initial training; on the contrary, if it is part of progress in transforming pedagogical practice, it should be studied and reflected upon; because teachers are socio-historical subjects that need to be in time and with the time they are, as Paulo Freire (2024) argues, it is necessary to

recognize “minimally” the culture of our time, in order to understand the students, their processes of relationship and learning, to leave on the one hand a “dormant” society, and on the other hand strengthen it, with a sense always attentive to the understanding of the new, change and transformation, as part of a further gear in the National Educational System for mobility and consciousness revolution, since there is no human existence without challenges, without risks, without desire and motivation for change, without the encouragement of sentient subjects who are able to use technologies in their concrete reality, and who make sense of it and transform it.

Declaration of Generative AI and AI-Assisted Technologies in Writing Process

The use of generative artificial intelligence in this paper was for assistance and support, as well as revision of grammatical aspects and coherence through software such as ChatGPT and Gemini. The ideas presented are unique and original on the part of the author that reflect the reality of the subject as well as its development in his territory.

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