

Edu Book

GLOSSARY OF EDUCATIONAL INNOVATION 2024

A guide for teachers looking to stay updated with emerging trends
in pedagogy and educational technology



INTRODUCTION

Today, more than ever, teachers need to be informed and prepared with the necessary tools to face the uncertainty and challenges that the post-pandemic world will bring. Thanks to the Internet, teachers have access to a vast number of educational resources, including books, publications, and online courses. However, academic literature is full of terms and jargon that are replicated in various media, often without proper knowledge of their meaning.

Considering that teaching work transcends the classroom, as teachers perform a myriad of activities before and after each session, we have prepared this Glossary of Educational Innovation, focused on trends in pedagogy and educational technology. This work is aimed at teachers who want to stay updated with emerging trends in educational innovation.

Karina Fuerte

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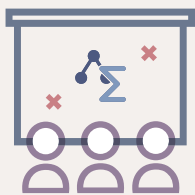
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GLOSSARY OF EDUCATIONAL INNOVATION 2024

Trends in Pedagogy

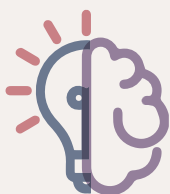
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Active learning

A teaching and learning strategy focused on the student, promoting their participation and continuous reflection through motivating and challenging activities aimed at deepening knowledge, developing the skills of information search, analysis, and synthesis, and promoting active adaptation to problem-solving.



Authentic learning

A type of learning based on constructivist psychology in which a student relates new information to previously acquired information, readjusting and reconstructing both pieces in the process. The structure of prior knowledge and experiences conditions new knowledge and experiences; the latter, in turn, modify the former.



Lifelong learning

The process of individual learning and development throughout life, from early childhood learning to learning in retirement. It is an inclusive concept that refers not only to education in formal settings such as schools, universities, and adult education institutions but also to “lifetime” learning in informal settings, at home, at work, and in the community at large.



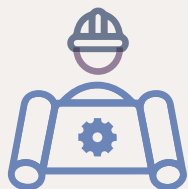
Research-Based Learning

The application of teaching and learning strategies that aim to connect research with teaching. Said strategies allow students to be partially or totally incorporated into research based on scientific methods under a teacher’s supervision.



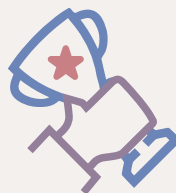
Problem-based learning

A didactic technique in which a small group of students meet with a tutor to analyze and propose a solution to the approach to a real or potentially real problem related to their physical and social environment. The objective is not to solve the problem but to use it as a trigger for students to meet the learning objectives and develop personal and social skills.



Project-based learning

A didactic technique focused on the design and development of a project in a collaborative way by a group of students to achieve the learning objectives of one or more disciplinary areas and develop skills related to the management of real projects.



Challenge-based learning

A strategy that provides students with a general context in which they must collaboratively determine the challenge to be solved. Students work with their professors and experts to solve this challenge in communities around the world and develop a deeper understanding of the topics they are studying.



Collaborative learning

The didactic use of small groups in which students work together to obtain the best learning results both individually and as a group. It fosters the development of skills, attitudes, and values in students.



Online learning

Teaching-learning processes that are carried out through the Internet and characterized by a physical separation between teachers and students. It has the predominance of both synchronous and asynchronous communication, i.e., a continuous didactic interaction is carried out. The student becomes the center of the training by having to self-manage their learning with the help of tutors and classmates.



Flexible learning

An educational method focused on offering the student options for when, where, and how to learn. This can help students meet their particular needs as they will have greater flexibility in the pace, place, and delivery of educational content. Flexible learning can include using technology for online study, part-time commitments, and program acceleration/deceleration.



Hybrid learning

A formal educational modality in which, under the guidance and supervision of the teacher, the student learns through a combination of sources: on the one hand, through the delivery of content and online instruction and, on the other hand, through a classroom format. Under this modality, students can control some aspects of the process, such as time, place, route, and pace. They can also interact with their teacher and classmates.



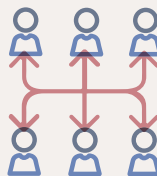
Flipped learning

A didactic technique in which the presentation of content is done through videos that can be freely consulted online, while classroom time is dedicated to discussion, problem-solving, and practical activities under the supervision and advice of the teacher.



Just-in-time learning

A learning system that delivers training content to students at the time and place that best suits them. Students can focus only on the information they need to solve problems, perform specific tasks, or quickly update their skills.



Connectivism

An educational theory that posits that learning occurs because of many diverse connections. It's oriented toward building networks supported by information and communication technologies and building new knowledge while learning.



Experiential learning

A learning model that involves going through experiences where students can feel or do things that strengthen their learning.



Service-learning

A didactic technique that links community service and efforts to learn from action, connecting what is learned from helping the community with already-established knowledge. It can be used to reinforce course contents and develop a variety of competencies in students with civic responsibility.



Constructionism

Learning theory that highlights the importance of action in the learning process. It states that students learn most effectively by constructing tangible objects, thus building their own knowledge structures.



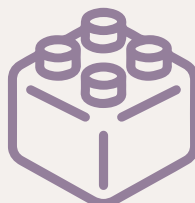
Competency-based education

Student-centered method focused on the development of knowledge, skills, and behaviors based on performance standards that must be proven in a tangible way. By orienting the subject toward understanding and solving increasingly more complex problems, competencies foster active adaptation to change processes in the subject.



Self-organized learning environment

An educational method in which teachers provide guidance and observe the classroom while students explore new concepts at their own pace. The academic curriculum is based on questions and issues that spark curiosity in the classroom. This curriculum leads to autonomous and collaborative research work to enable the acquisition of new knowledge, which the teacher can later reinforce.



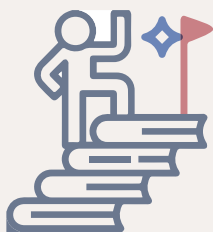
Makerspaces

Dedicated sites for students to learn to make their own creations by using design software, as well as tools and equipment to carry out their own projects: 3D printers, laser cutters, numerical control machines, welding equipment, and textiles area.



Gamification

Method that involves the design of a real or virtual educational environment that defines tasks and activities by following the principles of gaming. It is about leveraging the natural predisposition of students with playful activities to improve motivation toward learning, knowledge acquisition, values, and overall competency development.



Mastery learning

Modality of the teaching-learning process where the contents are divided into learning units clearly indicating the objectives that the student must achieve. Students work through each content block in a series of sequential steps and must demonstrate some level of success in knowledge mastery before moving on to the new content.



Maieutic method

A method that involves questioning a person to bring them to knowledge through their own conclusions instead of through preset concepts and prior knowledge. It centers on the intrinsic capacity of each person, derived from the idea that the truth is hidden within oneself.



Mentoring

An interpersonal relationship that promotes the development of a student is guided by a person with greater experience of knowledge. The person receiving the mentorship has traditionally been called a mentee or apprentice.



Peer learning

A reciprocal learning experience that involves sharing knowledge, ideas, and experiences among a couple of students. It can be understood as a strategy for bringing students from independent learning to interdependent or mutual learning.



Experience-based learning

A model in which the students' experience is central to all teaching and learning considerations. This experience may include past events in the students' lives, current events, or those arising from participation in activities implemented by teachers.



Case method

A didactic technique in which students build their learning from the analysis and discussion of real-life experiences and situations. They are involved in a process of analyzing problematic situations for which they must come up with well-founded solution proposals.



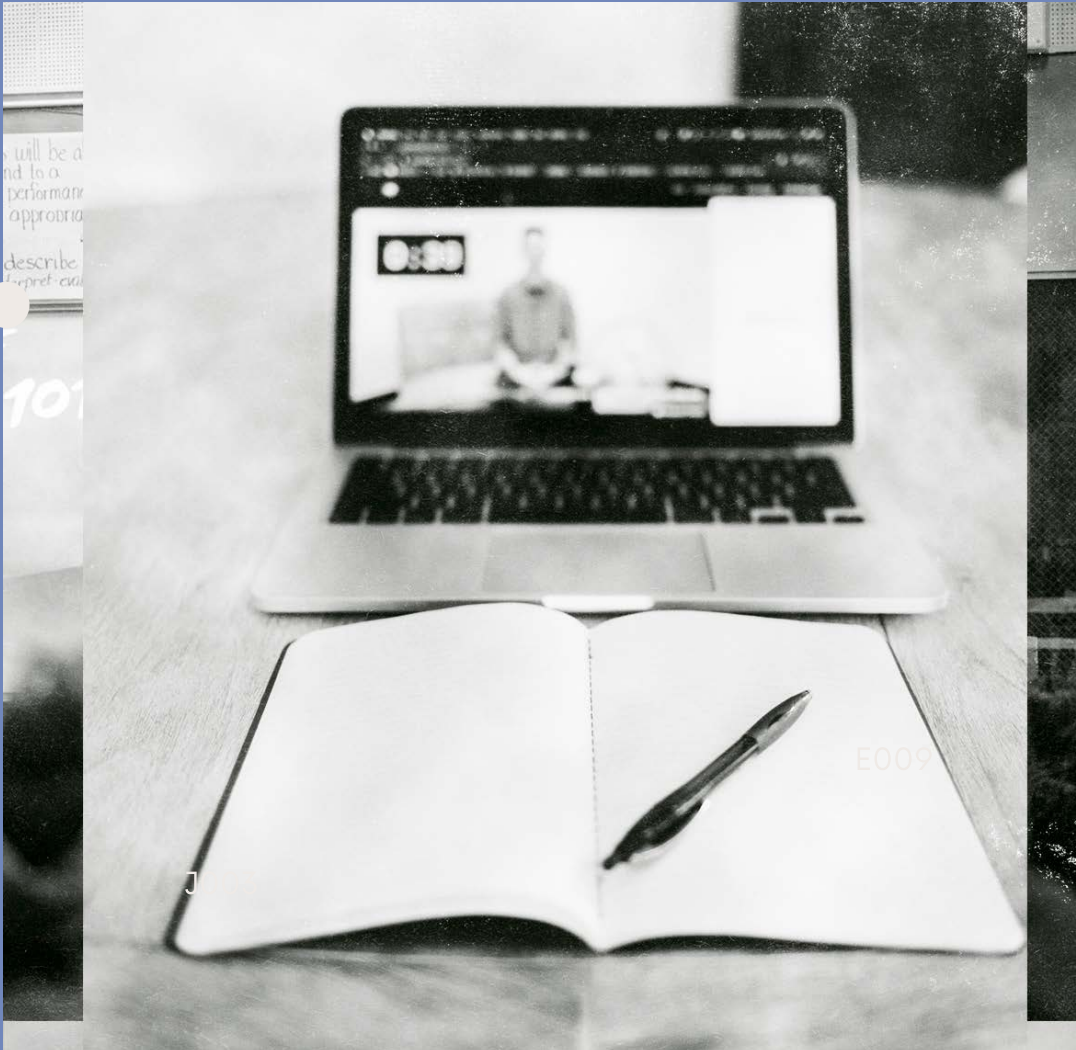
Global learning

Learning approach focused on collaborative problem-solving and analysis to address complex issues that cross borders. Its intent is to bring students closer to different cultures and eliminate stereotypes.

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GLOSSARY OF EDUCATIONAL INNOVATION 2024

Trends in Educational Technology



Adaptive learning

Instructional method that uses a computer system to create a personalized learning experience. Instruction, feedback, and correction are adjusted based on student interactions and demonstrated level of performance.



Wearable tech for learning

A strategy that incorporates the use of electronic devices in clothing and accessories worn by students to carry out a learning activity.



Learning in social networks and collaborative environments

Use of existing or proprietary platforms of- ten hosted in cloud services that empower social and collaborative learning regardless of where participants are located. It incorporates various technological resources such as social networks, blogs, chats, online conferences, shared whiteboards, and wikis.



Mobile learning

Use of mobile technologies such as laptops, tablets, MP3 players, and smartphones to support the teaching-learning process. Students can access educational resources from the devices they carry at all times.



Ubiquitous learning

Training strategy in which learning happens anywhere and at any time thanks to the use of technologies that are integrated into our daily lives in everyday objects. Through these technologies, training content and activities are always available to students.



Big Data and learning analytics

Use of tools and techniques that handle large amounts of student data available on learning platforms, entrance exams, academic history, libraries, and student interactions in discussion forums. By managing this student data, you can determine their current learning status, forecast their performance, and take corrective actions.



Virtual assistants

Artificial intelligence applications that are capable of interacting with humans in their own language. In education, a virtual assistant could facilitate interaction between the teacher and student by offering greater accessibility and improved customization to provide them with information, tutoring, test management, and more.



Affective computing

Computational system capable of detecting the emotional state of users. This technology can have a great impact on education since learning is associated not only with cognitive skills but also with emotions, expectations, prejudices, and social needs. Many technologies, such as simulations, role-playing, language detection, and facial recognition, can be used to create an emotionally deep learning environment.



Massive Open Online Courses (MOOC)

Training resources hosted on the web that make use of the didactic strategy of connectivism and have the potential to bring together thousands of participants in a single virtual space. These courses are accessible to anyone with an Internet connection. In addition to videos, readings, and learning activities, they provide forums where the teacher and students engage in knowledge sharing.



Alternative Credentials

The variety of competencies, skills, and learning outcomes that arise from activities unrelated to a professional degree. These credentials are aligned with the specific needs of the workforce.



E-Books

Electronic versions of books that can be accessed on computers and mobiles and allow the student to interact in a more integral way with the content.



Personalized learning environments

Systems that students can set up themselves to take control and manage their own learning. It entails setting learning goals, managing content, and communicating with other students. These environments can be composed of one or more subsystems: LMS, blogs, and feeds. They can be a single desktop application or one or multiple web services.



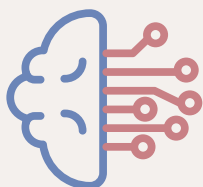
3D printing in education

Using printers that allow students to create parts, prototypes, or volumetric mockups from a computer-made design. It helps teachers and students to visualize in 3D concepts that are difficult to illustrate otherwise. Students can design and print their models, test and evaluate them, and, if they don't work, redo them.



Badges and microcredits

Badges are a mechanism for granting students certification of informal learning in the form of microcredits. Students can collect, organize, and post them to demonstrate their skills and accomplishments on different websites: social media, social networking, professional networking, and virtual communities.



Generative Artificial Intelligence

Also known as GenAI, a field of artificial intelligence that focuses on the creation of models and systems capable of generating new and original data that is indistinguishable from real data. These models use techniques such as generative adversarial networks (GANs), autoregressive neural networks, and flow models to learn how to generate realistic data, such as images, text, audio, or even video (OpenAI, 2024).



Internet of Things

The interconnection of everyday objects with the Internet. It allows the exchange of relevant data generated by devices, making daily life easier. For example, a student could learn a language by touching physical objects that reproduce their name through a message or voice.



Remote and virtual labs

Virtual labs are web applications that emulate the operation of a real lab to practice in a safe environment. Remote labs provide a virtual interface to a real lab. Students work with the team and observe activities via a webcam from a computer or mobile device, allowing them to have a real point of view of a system's behavior and access professional lab tools anytime they need them.



Open Educational Resources (OER)

Teaching and learning resources that are open to the public to be used freely and free of charge because they do not have a start/end date and allow participants to learn at their own pace. OER may include full courses, course materials, modules, textbooks, videos, exams, software, and any other resources.



Augmented reality

Technology that complements perception and interaction with the real world and allows the student to superimpose a layer of information on reality, thus providing richer and more immersive learning experiences.



Telepresence in education

The use of audiovisual technologies for educational purposes that allow students and teachers to interact remotely and synchronously in conversations, classes and teamwork.



Virtual reality

An immersive technological environment made up of a three-dimensional simulation in which the user engages various senses to interact with the simulation. The user experiences the feeling of being mentally immersed in the artificial medium.

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