“European network in D-flexible teaching (ENID-Teach)”

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Presentation

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Introduction

The aim is to provide online training to lecturers on flexible digital teaching practices (connected, collaborative and research, active and invested) and the creation of accessible and inclusive content. To do so, we will harness a methodology based on microlearning (microlessons and Nano Open Online Courses) predicated on a critical, social and network-based pedagogical model where critical and social teaching practices converge. Another objective is to create added value for the Erasmus+ program by offering an online skills training program in innovative, digital and multilingual methodologies.

Microlearning program

All the NOOCs share the three innovative elements indicated above: distributed pedagogical model; mixed and flexible model; microlearning program and configuration as a NOOC.

The microlearning program is based on microlessons or learning nuggets in multiple complementary formats, where content is fragmented into small steps to streamline the learning process. Content interconnection facilitates digital skills acquisition in an entertaining and agile fashion, interlinking theoretical content with practice, self-assessment activities, discussion and final evaluation, all in different formats. It is also taught as a NOOC. The model enables learning to be

integrated into daily teaching practice by presenting short lessons and fast and streamlined activities. It permits learning tailored to individual faculty agendas, access to content anywhere/anytime, and the intercalation of active, reflective and critical, agile and interactive content.

General presentation of each methodology

Basado en Santoveña-Casal (2022), Cartografías Cartografía de la sociedad y educación digital (Investigación y análisis de perspectivas), Tirant Lo Blanch.

NOOC 1. Connected and Critical Methodologies

In this NOOC, teachers are given training in social media work (interpersonal and digital) and critical thinking. We will harness connected learning to emphasise hyperconnection, networking and collaborative learning to highlight the importance of social and interpersonal variables in knowledge acquisition in the digital society. In this context, disinformation is a phenomenon specific to the development of modern society, which in the digital society has become a global social problem without borders. Critical thinking is the cornerstone required to move credibly in the digital society and facilitates decision-making, with this process being more important than the end product since critical thinking is about more than making appropriate decisions - it is the way of thinking about something that empowers thought of a higher quality.

NOOC 2. Collaborative and Research Methodologies

In this NOOC, teachers will be trained to develop online learning processes and collaborative work in a connected fashion. The course starts from the principle that it is not just about good teamwork without sharing a physical space, but involves many other skills, competences and attitudes that have to be learned and worked on. This type of activity emphasises the process of constructing the work rather than the end result, so it represents a profound change in the conception of our model of vertical education, where the teacher transmits knowledge to the students and they reproduce it in different ways, towards a more

horizontal and constructivist idea. At the university, applying collaborative methodologies to the field of research is essential for teachers and students alike.

NOOC 3. Active and Gamified Methodologies

Teachers will be trained in practices based on the active ingredients of the New School and the application of gamification environments for professional and university contexts. The importance of these methodologies is predicated on the potential to develop didactic practices where students feel they own the collective construction of knowledge and their learning process. A specific approach is taken to turn learning into an active, meaningful and critical reality. The methodology focused on gamification processes is based on the active component involved in gaming and its importance in the professional, university and educational spheres. Through gamification processes, creativity is developed and the relationship between academic concept and reality is empowered.

NOOC 4. Inverted Methodologies

This hybrid model is characterized by its flexibility and ability to adapt to students and the features of the subjects to be taught. Teachers will be trained in designing flexible programs and managing different communication processes.

Hybrid models were the most widely used during the pandemic as a means of combining physical presence and online interaction, as well as the increasingly frequent incorporation of digital connected elements, but they took the form of ad hoc responses rather than a stable learning model.

NOOC 5. Designing Flexible Learning E-Programmes

In this NOOC, teachers will learn to design a model within the pedagogical framework i.e., models designed specifically for these learning environments, where virtual technologies and methodologies are combined with place-based sessions. A set of methodologies, resources and contents are integrated, giving

rise to new pedagogical models with as much variability as differential elements found in the classroom.

1. Connected and Critical Methodologies

Sonia Santoveña-Casal and Susana Regina López

Universidad Nacional De Educación A Distancia (UNED)

Definition

Connected and critical methodology refers to a learning and teaching methodology based on two basic elements, on the one hand, on connectivist learning and, on the other hand, on learning through critical thinking. According to Santoveña-Casal (2021, 2022), connectivist learning:

> *Critical thinking is reflective thinking, it is a skill and commitment to the performance of a reflective activity and, he adds, that it is that thinking that is based on reasoning and reflection to make decisions (Ennis, 1987). It is a way of thinking that allows us to make informed decisions (search, select, integrate and evaluate information), with the decision-making process being more important than the final product, since critical thinking is more than making appropriate decisions (Santoveña-Casal, 2021).*

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Description

To explain networked learning, Siemens (2012) offers a specific theoretical framework: connectivism. We learn by connections between nodes. It is developed by the integration between diverse sources of information, points of view and plurality of opinions. This is the theoretical framework that defines connected learning, which from our perspective is always inexorably associated with critical thinking.

The methodology based on connected and critical learning focuses on a networked learning process. If we recall the connectivist theory of Siemens (2012), among other characteristics, this learning implies that each person can decide what to learn, when, where, as well as the meaning he/she gives to the information he/she receives. Interpersonal networks and digital networks provide the context where this information flows between nodes from which it acquires multiple interpretations.

In connected and critical learning, three fundamental elements come into play, a process of convergence takes place between cognitive, communication and socialisation processes; three elements that are intrinsically related: cognitive processing refers mainly to the implementation of critical and reflective thinking; the communication process is directly related to our ability to disseminate information and exchange knowledge, express, debate and defend ideas; and in socialisation in social networks it is important to create processes of cohesion and affiliation that can lead to the generation of communities with shared objectives (Santoveña-Casal, 2022).

Learning in networks takes place in social situations and through group work processes, giving rise to collaborative learning and opening high possibilities for the emergence of thinking together in a critical and reflective way. Critical thinking refers to how we select, interpret, understand and integrate information and how we do this in a critical and reflective way. It must be understood, in short, in a framework of active participation, connections and relationships, which goes

beyond an instructional design based on a platform (Santoveña-Casal, 2021, 2022).

For the application of this methodology, the design of an activity based on digital social networks is suggested, whether they are internal or external networks to the institution (private or free software). The important thing is to facilitate a medium that makes interpersonal relationships and group work possible. The process of networked learning will be developed, firstly, through individual work of study and reflection on the academic content, then immersion in the network of interactions (digital or not), to then move on to a social phase of effective participation in the network and reflection and analysis of the contributions of the rest of the group. Finally, students will carry out a reflective analysis of the group experience, as well as the preparation of a final report including the description and analysis of this experience.

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2. Collaborative and Research Methodologies

Irene Méndez Sánchez and Susana Regina López

Definition

We understand collaborative learning to be that which takes place in a given socio-cultural context and on the basis of social constructivism, with Vygotsky as a precursor and referent. This current of thought considers the individual as the result of a historical and social process where knowledge implies interaction between the subject and the social environment. Learning is understood, from this framework, as a social, contextualised and collaborative activity. Thus, collaborative learning is framed within the theory of social constructivism (Gosden, 1994) and is concretised in the construction of knowledge through interaction with a group and through tasks carried out in collaboration with others.

Collaborative learning is learning that leads students to construct knowledge through exploration, discussion, negotiation and debate. The role of the teacher in this context is merely to guide and facilitate the process and is limited to the presentation and introduction of the topic, as well as monitoring the process. Their views must be discussed, contested or confirmed by group interaction and constant dialogue between group members and the teacher.

Description

Description

The environment becomes a fundamental component for learning, as proposed by authors who hold the idea of "person plus environment" (Pea, 1993; Perkins,

2001). These authors consider that "the mind does not work alone" and introduce the concept of distributed cognition, from which the process of knowing is distributed physically, socially and symbolically.

At this point, it is worth making a distinction between two concepts, which, although related, refer to different cognitive processes and lead to different results when talking about the production of work done in groups. We refer to the distinction between cooperative work and collaborative work.

Authors such as Slavin (1989) and Johnson and Johnson (1986) argue that cooperative work implies a high degree of commitment to the task and a favourable attitude towards the exchange of ideas. In a work group with these characteristics, the outcome of the work shows that the group is more than the sum of its parts, and all learners perform better than if they had worked alone. Johnson and Johnson (1999) consider that peer cooperation involves five essential elements: 1- Positive interdependence, where members of a group pursue a common goal and share resources and information. 2- Promotion of interaction, where members of a group help each other to work efficiently and effectively, through the individual contribution of each member. 3- Individual responsibility, whereby each member of the group is accountable for his or her individual contribution and for the way in which that contribution contributes to the learning of all. 4- Group work skills and abilities, which involves each member communicating, supporting others, and resolving conflicts with another member constructively. 5- Positive interaction, which promotes that everyone should maintain a good cooperative relationship with others and be willing to give and receive constructive feedback and criticism on their contributions.

Returning to the distinction between collaboration and cooperation, we consider the idea of Osuna-Acedo (2011) who warns us that collaborative learning has a socio-cultural approach, while cooperative learning has a Piagetian approach of constructivism. The latter involves the distribution of tasks by teachers in a group working to achieve a common goal in a non-competitive way. Each student is given a specific task for which he or she is responsible and then the task is shared with the rest of the group. Collaborative learning implies leaving the main

responsibility for learning to the students, not requiring a high level of teacher intervention (p.16).

In the context of digital education, support is essential to give specific weight to interpersonal communication, facilitate collaborative work, monitor the progress of the group, both individually and collectively, and facilitate interaction for the resolution of group activities where technological mediation is relevant.

Collaborative digital methodologies favour the development of the learning process itself through the reinforcement of the communicative process and the processing of information in a group. This collaborative and cooperative work favours the creation of bonds of positive interdependence and responsibility (Unesco, 2014). This is one of the objectives we consider most important in this context.

From a more personal perspective, sharing personal experiences is the key to collaborative learning (Barab, Thomas and Merrill, 2001). They make particular reference to virtual environments as more participatory spaces, which expand opportunities for research, communication and knowledge sharing. In digital environments, peer-to-peer collaboration is evident in collaborative writing experiences, such as the communities of "Booktubers" who review books and post videos on the Internet to share their opinions, which generates an active community of literary recommendation among peer readers through the Web. Peer-to-peer socialisation of experiences, content and information are also examples of the possibilities and promotion of collaborative learning.

According to Anderson, Scagnoli & Stephens, (2005), the success of collaborative learning in digital education depends on several factors, including, on the one hand, the choice of applications and platforms that allow communication and the development of collaborative activities, as well as the use made of them and, on the other hand, the role of the teacher as a motivating agent for students in the participatory/collaborative process. Among others, networks, forums and blogs are highlighted as spaces that favour collaborative learning: forums, blogs, wikis, social networks, among others. Among the activities, we can find the review and critique of work among peers, the creation

of common projects or dynamics that contribute to interaction such as role-playing games.

As we have mentioned in previous paragraphs and following Mora-Vicarioli and Hooper-Simpson (2016), the change of role, both for teachers and students, in terms of collaborative work in virtual spaces, also implies other changes related, for example, to the materials, activities and their instructions or, more specifically, to the mediation process that, in virtual environments, will be required:

1. openness and flexibility of the educational process

2. Self-managed learning

3. Spaces for reflection

4. Managing motivational environments

5. Continuous evaluation of the learning process

Finally, it is worth highlighting the value of collaborative work in research instances. In this sense, collaborative work can be the object of research, for example, as the research of learning groups is itself the object of analysis. But collaboration can also be understood as an input to facilitate the task of the research team. Collaborative reflection of research results implies a look beyond individual data analysis.

According to Cano (1996), collaborative research is a way of constructing knowledge in which it is worth highlighting some relevant aspects, such as the work climate it generates among participants or the joint construction of a methodology that allows knowledge to be developed collaboratively. It is a process in which the members of the group must learn to identify and respect the previous knowledge and skills that each member brings, in order to develop research projects in an effective and enriched way.

For this, technologies are valuable inputs to foster collaborative analysis through sharing cases, editing joint documents and socialising data or results to submit them to the judgement and feedback of the working team. In this framework,

social networks play an important role in the exchange and updating of researchers, both new and already trained researchers, because through them information, publications and academic events are shared where the results of research are socialised, giving rise to the collaborative production of knowledge.

Finally, in the field of educational research, in particular, the institutions and agents involved in it are heterogeneous and diverse, which is precisely where the research richness of this field lies. Collaboration between institutions is fundamental, as stated by Loan-Clarke and Preston (2002), who highlight some advantages of collaborative research, among which Domínguez-Gaona et al. (2015) highlight: that "better use is made of individual talents and the transfer of knowledge and skills is promoted, that it is a source of stimulation and creativity that provides intellectual companionship, that it expands individual research networks and favours the dissemination of projects".

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3. Active and Gamified Methodologies

Carmen Cantillo, Mª Jesús Roldán, Eva Mª Guimenez Muñoz and Cristina Sánchez

Definition

The teaching process requires prior planning which regulates the elements of the curriculum, among which are the methodological strategies organised by teachers, in a conscious and reflective manner, with the aim of enabling student learning and the achievement of the objectives set. The design of the curriculum, therefore, must be based on the analysis of the context and the students in order to create learning experiences that take into account their resources, skills and interests.

According to Díaz et al. (2017), the use of play as a learning strategy allows the acquisition of basic strategies and social integration while favouring deep, reflective and critical learning (p. 135). This type of learning is defined as educommunication, and advocates the active participation of learners during the production and reception of information. López (2007) points to new media as facilitating mechanisms for the construction of democratic learning spaces. Deterding et al. (2011) highlight the intention of gamification to "make a product, service or application more fun, engaging and motivating". For his part, Bunchball (2010) cites that its aim is to "achieve user participation and involvement", Zichermann (2012) comments on "engaging users" and Burke (2011) on "fun activities".

Therefore, we can affirm that gamification is directly linked to three fundamental aspects: user motivation, involvement and fun. Roa et al (2021) list the main advantages of the use of this methodology, among which we can highlight the increase in student motivation, the improvement of self-knowledge, the promotion of cooperation when working in teams, the improvement of the retention of

significantly acquired knowledge, the possibility of knowing the progress through feedback, the opportunity to create a safe learning environment, etc. However, we cannot forget that in this whole process it is necessary to strike a balance between the playful and formative character, in addition to the required digital competences implicit in the use of these technological resources.

A methodological strategy in line with this educational approach is the use of gamification in the classroom, based on the inclusion of ICT as a reference. All this involves incorporating playful elements in non-playful contexts with the aim of encouraging motivation and promoting participation as a driver of change.

Both students and teachers consider the incorporation of gamification as a methodological strategy to be key (Gil-Quintana and Prieto, 2020), since it offers a series of advantages such as: the achievement of sustained attention, more productive and comprehensive learning, commitment, participation and the construction of support networks among students.

The traditional education system is starting to use this methodology, where gamification continues to be a challenge for people who are committed to an interactive, participatory and horizontal pedagogy.

Description

Gamification uses elements of game design in non-game contexts to seek challenges and motivate action (Deterding, Dixon, Khaled and Nacke, as cited in Alcaraz and González, 2019), it aims to cover teaching objectives in the classroom context to ensure that meaningful learning takes place. Gamification corresponds to a methodology used in the classroom to carry out a teaching action and differs from gaming in that it is carried out for the simple pleasure of playing and without any educational intention.

The choice of this methodology is due to the great benefits it brings to learners. Borrás (2015) highlights among them the activation of motivation for learning, constant feedback, more meaningful learning, more measurable results, the

generation of appropriate skills and digital literacy. Thus making learners more autonomous, competitive and collaborative.

A key factor in gamification is motivation, since for learning to be meaningful, students must be motivated. Motivation implies participation, concentration and, most importantly, it awakens the desire to do something. Gamified learning, therefore, must be motivating at all times and the way to achieve this is to consider the flow theory of Csikszentmihalyi and Nakamura (as cited in Reyes, 2018) which states that the activities performed by the subject must pose a possible challenge to achieve, without losing sight of the objectives that pose a challenge and a response or feedback of the activity performed, whether it is overcome or if it is successful or failed.

The design of a gamified activity is totally related to the game elements used in it, which will mark the learning and the success or failure of the projected activity. It is essential to start from the application of pedagogical criteria and an analysis of the functioning and use of the resources to be incorporated. Without forgetting the emotions aroused in this process, as they will mark the degree of learning and the involvement of the students (Foncubierta and Rodríguez, 2014).

The connection of gamification with the emotional component is extensive, in fact, everything that appeals to the senses or involves has a direct relationship with a learning experience as something felt, experiential and emotionally active. What lacks emotion does not attract our attention (p. 4).

These authors recognise an improvement in the following affective factors through gamification:

- Positive dependence: challenges.
- Curiosity and experiential learning: storytelling, imagination...
- Self-image protection and motivation: creation and design of an avatar.
- Sense of competition: scores, rankings, leaderboards...
- Autonomy: taking initiatives, building self-confidence, progress and achievement bars.
- Tolerance for error: thinking about the game and instant feedback.

Based on Foncubierta and Rodríguez (2014) and what is reviewed in the aulaPlaneta blog (Editorial Planeta, 2015), we highlight the most important phases to follow in the classroom:

- Define a clear objective: what is the goal and what skills the students are going to learn.
- Setting the activity with a narrative: enveloping the learning in an imaginative environment that provides proximity, comfort, encourages attention and develops creativity.
- Propose a specific challenge: this will encourage motivated participation by the students.
- Establish certain rules: concrete rules for healthy competition and orderly participation.
- Allow each student to create their own avatar: to break the barrier against embarrassment and build self-esteem.
- Create a reward system: to observe behaviour, attitudes, participation and check for progress.
- Propose a competition with rankings: students can see their progress, encouraging their motivation through healthy competition.
- Establish levels of increasing difficulty: depending on the progress made by each participant.
- Provide feedback after correcting mistakes: in this way the pupil will see mistakes as something natural and that he/she is capable of overcoming.

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4.Inverted Methodologies

Rubén Gómez Méndez

Definition

Inverted methodologies (also called flipped methodologies) are a pedagogical approach in which direct instruction us carried out outside of class timing and this time is used to develop activities that entail meaningful learning. Bergmann & Sams, pioneers in these methodologies, began to invert their teaching method by sending videos to their students to watch before classes in order to reserve teaching hours to carry out projects with which they will develop more un depth and put into practice the knowledge acquired, as well as resolve doubts (Berenguer, 2016).

Description

The paradigm shift in education has achieved a new model focused on active methodologies. Active methodologies are student-centered methodologies where students are the center of the teaching-learning process. They are methodologies opposed to traditional learning, where teacher was the main actor and students were passive agents. This is what Freire defies as “banking education”, in which students are empty containers where teacher deposits his knowledge. With student-centered-actives-methodologies, it is about creating an interactive process with a proactive role for students, fostering their critical capacity. Among these active methodologies we can find inverted methodologies.

In these methodologies, learning activities are inverted; those that are traditionally carried out inside the classroom are carried out outside and vice versa. Activities that were traditionally carried out during class time (lectures, presentations, etc.) are worked on by students beforehand by watching videos, listening podcasts, reading documents, etc., so student does individually the first

part of learning, that implies a lower cognitive level. Class time is dedicated to activities of a higher level of cognition, where an individual and/or group active learning process is carried out, which requires the student to analyze, and apply the contents previously worked on. In these activities doubts about more complicated aspects are solved, where the teacher plays a facilitator role, gives feedback and quickly evaluates key ideas and concepts (Opazo et al., 2016).

In digital environments, this can be worked through firstly; the creation of digital content so that students make a first approach and generate a first learning; for secondly to propose the sequencing of a series of individual and/or collaborative activities that require previous learning and that guide students to achieve deeper and more meaningful learning. It is necessary to highlight that learning that is generated with the theoretical contents that are going to be exposed is more superficial and that is necessary to promote a deepening of it through the activities that are proposed and that it will be here where true meaningful learning arises.

In this methodology, learning is the responsibility of the student and with it, participation, involvement and the use of digital technologies are enhanced. This makes possible to develop, and enhance critical thinking, autonomous and self-regulated learning, the capacity of analysis, synthesis and evaluation together with the skills for teamwork, time management, pro-activity, the ability to adapt, discipline, the demands of changing situations and the development of the necessary skills required of professionals in 21st century (Pozo & Pérez, 2009).

The growth of digital technologies on a large scale and the exponential access of students to them since the end of the last century facilitates the implementation of flipped methodologies, since it offers us a great amount of possibilities. Thanks to these digital technologies, the availability of digital resources (videos, podcasts, blogs, documents, presentations and a long etcetera) is infinite and the will allow us, on the one hand, to design an infinite number of multilingual resources and, on the other, that students have easy access to all of them and can set their own pace of learning. You can, for example, present theoretical content with videos and podcasts of experts talking about the subject and then, propose a practical activity that encourages inquiry, deepening and reflection,

complemented with debates in forums and social media so that with the exchange of ideas and points of view of the students, always with the teacher as a guide, it is possible to reach the acquisition of deep and meaningful learning that we want to achieve.

When designing a pedagogical model based on flipped methodologies, we need to consider:

- Ease autonomous learning.
- Encourage student involvement.
- Increase student engagement.
- Allow learning at a pace that adapt each student.
- Personalize teaching-learning process.
- Encourage participation.
- Encourage inquiry and practice experience.
- Turn the classroom into a space for the exchange the ideas, where questions are raised, and doubts solved.
- Strengthen interaction among students.
- Link the interests of the students with the contents.

This methodology is also compatible with other active methodologies, such as collaborative or gamified methodologies.

In order to delve deeper into this content, the following readings are recommended:

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5. Designing Flexible Learning E-Programs

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Definición

Educational quality has been a constant concern throughout history, but in the current post-digital context it has become a central challenge for education systems, driven by a society that is increasingly demanding educational excellence (Puelles, 2009). In this framework, flexible education has emerged as an innovative response, especially in higher education, which aims to educate students holistically and to foster their potential in a broad and dynamic environment.

Flexibility in education, especially in digital environments, poses significant challenges. According to Collis and Moonen (2001), it has been conceptualised from multiple approaches, often reduced to the ubiquity of learning (anytime, anywhere). However, more holistic approaches consider variables such as pace, content, learning styles, assessment and accessibility (Ling et al., 2004). The International Council for Open and Distance Education (2009) defines flexibility as a means to achieve a more open, global and inclusive education.

Mosquera Gende (2022) points out that the online university represents an optimal scenario for promoting flexible education and encouraging active and informal learning. From this perspective, Santoveña-Casal (2023) expands the concept by defining flexible digital pedagogies as those based on blended and student-centred learning processes, with adaptable organisational dynamics, pedagogical variety and accessible and inclusive content, always under the framework of Universal Design for Learning (UDL). This approach puts learners at the centre of the educational process, allowing them to learn when, how and about what they want, as stated by Van den Brande (1993).

Descripción

The implementation of a model based on flexible digital pedagogies requires attention to fundamental elements such as accessibility, inclusion and adaptability of educational design. These features are essential to ensure equitable and fair education, aimed at meeting the needs of a diverse population.

Universal Design for Learning (UDL) provides the conceptual framework necessary to achieve this goal. According to Figueroa et al. (2019), UDL promotes accessibility through a variety of pedagogical options, adjusting to students' different learning styles and paces. This approach, supported by the Centre for Applied Special Technology (CAST, 2011), leverages technologies and teaching experiences to enrich teaching and reduce educational exclusion.

Pedagogical flexibility also includes the incorporation of varied and dynamic methodologies, adapted to the different moments of the teaching-learning process. These processes allow learners to access online courses or programmes based on digital technologies at any time and place, with adaptable deadlines and reduced or free costs, as in the case of NOOCs. Burge, Campbell and Gibson (2011) stress the importance of these programmes being practical, relevant and current, thus ensuring their relevance to a wide range of learners.

Inclusion is another key pillar of flexible education, understood as a continuous process of identifying and responding to the diverse needs of learners. This requires changes and innovations in educational content, structures and strategies to ensure a common and accessible approach for all.

Pedagogical flexibility is a joint effort of teachers and learners. It involves the active participation of the latter, so that their learning process is a transformative and meaningful experience. As Santoveña-Casal (2023) points out, the keys to flexible pedagogical design lie in methodological and pedagogical richness, technical support, available technologies and the ability to adapt to the differences and profiles of students. This approach not only promotes active learning, but also contributes to a more inclusive and accessible education in line with the demands of today's society.

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