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E-ACTIVITIES AND TEACHER TRAINING: DEVELOPING PROPOSALS IN AND FOR THE DIGITAL REALM[1]

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Abstract: In response to the pandemic, Portuguese institutions and teachers have sought training in digital technologies in education. This article presents the results of the micro-credential 'E-activities in course design', promoted by Universidade Aberta. The course was aimed at higher education teachers and trainers interested in creating online curricular units. Between 2024 and 2024, 23 classes were formed with around 25 participants each. The analysis was carried out using a satisfaction assessment instrument, which allowed for the examination of trainees' perceptions regarding the training programme.
Keywords: e-activities; teacher training; microcredits.

E-ATIVIDADES E FORMAÇÃO DE PROFESSORES: ELABORANDO PROPOSTAS NO E PARA O DIGITAL

Resumo: Este artigo apresenta os resultados da microcredencial "E-atividades no desenho de cursos", promovida pela Universidade Aberta. O curso foi direcionado a professores do ensino superior e formadores interessados em criar unidades curriculares online. Entre 2022 e 2024, foram formadas 20 turmas com cerca de 25 participantes cada. A análise foi realizada por meio do instrumento de recolha da satisfação que nos permitiu verificar a perspectiva dos formandos sobre a formação.
Palavras-chave: e-atividades; formação de professores; microcredenciais.

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ACTIVIDADES ELECTRÓNICAS Y FORMACIÓN DEL PROFESORADO: ELABORACIÓN DE PROPUESTAS DIGITALES

Resumen: Con los cambios impulsados por la pandemia, las instituciones y los profesores portugueses han buscado formación sobre las tecnologías digitales en la educación. Este artículo presenta los resultados del micro-credencial «E-actividades en el diseño de cursos», promovido por la Universidade Aberta. El curso estaba dirigido a profesores y formadores de educación superior interesados en crear unidades curriculares en línea. Entre 2024 y 2024, se formaron 23 clases con cerca de 25 participantes cada una. El análisis se llevó a cabo mediante un instrumento de recogida de datos sobre la satisfacción, lo que permitió examinar las percepciones de los participantes respecto al programa de formación.
Palabras clave: e-actividades; formación de profesores; microcréditos

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1 INTRODUCTION

This article aims to present the experience of the E-activity Microcredential in course design, which is part of the modules in the Distance and Digital Education area. It is intended for teachers and adult educators who need to acquire and develop pedagogical competencies in order to teach in the Distance and Digital Education modality or to perform functions within this scope.

The aforementioned Plan is included in the proposal recommended by the Council of the European Union (CUE) (European Commission, 2022). Microcredentials were created to assist a large number of people who need to update their knowledge, qualifications, and skills through lifelong learning. As the name suggests, microcredential-type training courses are short, ranging from a minimum of 26 to a maximum of 260 hours.

The Universidade Aberta (Open University), leveraging its experience in lifelong learning since 2009, applied for the Impulso Adultos (Adult Impulse) program, an initiative funded by the Next Generation EU fund, aimed at reskilling and upskilling the workforce. Since 2021, it has received funding to develop training programs in various fields of knowledge, aiming to enhance the professional competencies of working Portuguese adults.

In this sense, this article aims to reflect on the contributions of microcredentials in e-activities to the training of teachers and trainers, based on a practical experience and supported by theoretical frameworks in the area. It raises the following questions: How does the microcredential in e-activities contribute to the transformation of pedagogical practices for online training? What are the main challenges and potentialities observed in the implementation of the microcredential and its results?

EThis study is justified by the need to produce frameworks that support the creation of practices and scenarios more focused on the structural elements of a digital pedagogical practice. Furthermore, it aims to contribute to broadening the debate on the role of microcredentials in strengthening specific competencies for digital teaching and learning contexts.

The theoretical frameworks used come from the areas of e-activities, digital pedagogy, online education, and pedagogical innovation. The reflections focus especially on the intentional and critical use of digital technologies in the design and implementation of e-activities, as elements that facilitate autonomous and collaborative learning.

From the perspective of contextualizing microcredentials and presenting the experience of the training module offered by Universidade Aberta (Open University), this article is organized into the

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following topics: “Microcredentials: the case of Universidade Aberta,” “E-activities: theoretical notes,” results and discussions, and final considerations.

2 MICROCREDENTIALS: THE CASE OF OPEN UNIVERSITY

At UAb, microcredentials are typically short-term courses with a workload between 1 and 6 ECTS (European Credit Transfer and Accumulation System) credits, designed to develop specific skills required by the labor market and society in general (Caetano, Casanova, Moreira, 2023). They encompass diverse settings (they can be in-person, online, or hybrid), inclusion, and transparency, as a way to respond to market demands.

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The process of conception, development, and implementation is generally a collaborative effort between academics (UAb faculty) and industry or service sector partners. This means that learning outcomes, activities, and assessments are carefully planned to meet the specific needs of employers and students, while simultaneously ensuring an authentic learning experience that allows trainees to directly apply their knowledge in their professional contexts.

No caso da Microcredencial de E-atividades no desenho de cursos, a parceria acontece com outras instituições de ensino superior portuguesas e instituições que pretendem que os seus docentes desenvolvam competências pedagógicas, para que os docentes sejam capazes de adaptar o seu ensino e de atuar no regime de Educação a Distância e Digital.

The area of Distance and Digital Education is structured into 8 short-term modules, as shown in Table 1.

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Table 1 - Training Modules in the Area of "Distance and Digital Education"

Module	Workload and ECTS	Duration
Digital Teaching in Networks	26 hours – 1 ECTS	4 weeks
E-activities in Course Design	26 hours – 1 ECTS	4 weeks
Course Unit Project in Digital Environment	52 hours – 2 ECTS	7 weeks
Digital Assessment of Learning	26 hours – 1 ECTS	4 weeks
E-moderation and Feedback	26 hours – 1 ECTS	4 weeks
Curation and Education: Active Practice Strategies	52 hours – 2 ECTS	8 weeks
Digital Competencies for Distance Education	26 hours – 1 ECTS	4 weeks
Supervision of Postgraduate Research	52 hours – 1 ECTS	8 weeks

Source: Impulso 2025 Project Website (https://impulso2025.uab.pt/)

Among these modules in the area of distance and digital education, the focus of this article will be on the E-activities module in course design.

Throughout the training program, trainees learn about the importance of e-activities in online teaching planning, their concept, and their foundations within the pedagogical process. The elements that constitute e-activities are directly related to the planning of the content to be taught. Learning to work with e-activities is essential for the development of online teaching, serving as a practical principle for pedagogical consolidation, or "how-to."

3 E-ACTIVITIES: THEORETICAL NOTES

Digital technologies have significantly transformed education, promoting online learning as a robust and dynamic alternative to traditional teaching. Within this context, e-activities emerge as a fundamental component for promoting interactivity, collaboration, and knowledge construction. This section addresses the concept, characteristics, functions, and importance of e-activities in the context of online learning.

Thus, the term "e-activity" refers to educational activities carried out through digital environments, especially in online teaching contexts. According to Garrison and Anderson (2003), e-activities promote active student interaction, stimulating critical reflection and the collaborative construction of knowledge. For Salmon (2004), e-activities are structured to encourage student autonomy and engagement through interactive and/or collaborative tasks. E-activities can be

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developed in different areas. In education, e-activities can be used to diversify learning methods, making the process more interactive and dynamic. They can include educational games, interactive exercises, and collaborative activities, among other possibilities.

E-activities have specific characteristics that distinguish them from traditional face-to-face activities. Among these, we highlight the following (Figure 1).

Figure 1- Characteristics of e-activities

Source: Original compilation

E-activities can be carried out synchronously, where participants are connected at the same time, interacting in real-time, or asynchronously, where participants can perform the activities at different times but still interact through digital tools, such as discussion forums, for example. E-activities contribute significantly to the development of digital competencies, promoting skills such as communication, collaboration, and critical thinking.

E-activities fulfill various pedagogical functions, such as: motivation, by making learning more dynamic and engaging. They aid in knowledge construction by facilitating the development of concepts through practical activities. Their interaction function translates into the possibility of contact between peers and teachers, even without their physical presence. Furthermore, they allow for monitoring students' development throughout their educational process.

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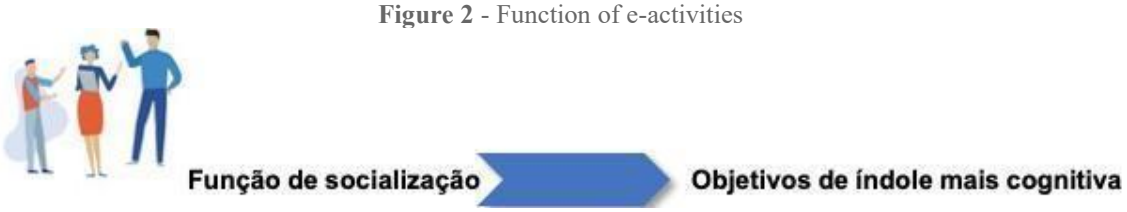
The development of e-activities requires careful pedagogical planning, considering factors such as learning objectives, technologies used, and methodological strategies. According to Garrison, Anderson, and Archer (2000), an effective model includes phases of socialization, information exchange, knowledge construction, and critical development. Salmon (2004) proposes a five-stage model comprising access and motivation, online socialization, information exchange, knowledge construction, and critical development. Each stage must be mediated by a facilitator, promoting engagement and collaboration – Figure 2.

Figure 2 - Function of e-activities



Source: Original compilation

E-activities play an important role in designing learning strategies. In the context of online education, e-activities are essential in designing learning strategies. They are planned to promote the development of specific competencies, enabling an active and collaborative approach to knowledge. According to Moran (2015), e-activities should be integrated in a way that stimulates the collective construction of meanings, using multimedia resources to diversify pedagogical approaches. One of the principles is continuous interactivity, which favors the exchange of ideas and critical reflection throughout the educational process.

When designing learning strategies that include e-activities, it is important to consider a few points, such as the suitability of the content for the digital format, the selection of appropriate technological tools for each activity, and the planning of activities that promote collaboration and interaction among students (Goulão et al., 2023).

Furthermore, it is important to ensure that e-activities are inclusive and accessible to all students, regardless of their skills and available technological resources.

Objectives and competencies are essential for guiding the planning and development of effective and relevant e-activities. How do these three factors relate to each other? We should start by:

a) Identify the learning objectives – Before creating an e-activity, it is necessary to clearly define the learning objectives to be achieved. These can be specific or more comprehensive;

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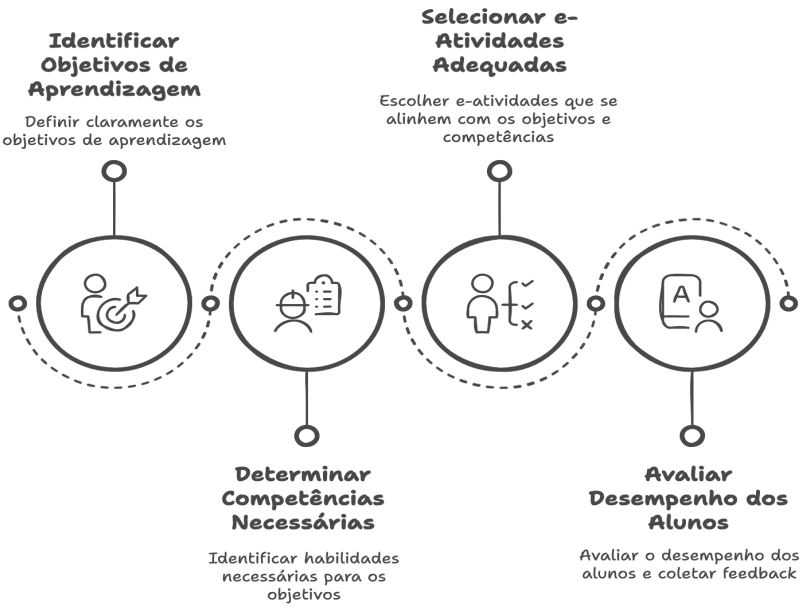
b) Identify the necessary competencies – Once the learning objectives have been identified, it is necessary to determine the competencies required to achieve them;

c) Select appropriate e-activities - Based on the learning objectives and required competencies, it is possible to select the most appropriate e-activities to achieve these goals. E-activities can be chosen based on their suitability for the complexity level of the learning objective, as well as their capacity to develop the necessary competencies;

d) Evaluate student performance - To assess the effectiveness of e-activities, it is necessary to evaluate student performance in relation to the learning objectives and required competencies. This can be done through formative and summative assessments, as well as by analyzing student feedback on the e-activities.

Figure 3 - Alignment of objectives, competencies, and e-activities



Source: The author

Another important element in this entire process, as we have seen, is feedback. Why? We know that feedback is an important part of the learning process and is also important regarding e-activities. By providing feedback on e-activities that are being developed or have already been completed, teachers can help students, on the one hand, to understand their progress toward the learning objectives; on the other hand, to guide how to improve their performance. Thus, feedback should be constructive, specific, and action-oriented, aiming to encourage the student and help them progress

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toward the learning objectives. Therefore, it must be carefully integrated into e-activities to, in addition to what has just been said, help develop more independent and autonomous students (Goulão et al, 2023).

In summary, e-activities are essential elements in online teaching, promoting engagement, interactivity, and the collective construction of knowledge. When developing and implementing these activities, it is crucial to consider theoretical models and pedagogical approaches that ensure their success. Studies indicate that the strategic and planned use of e-activities contributes significantly to the quality of online education.

4 METHODOLOGY

The reflection presented in this article is based on the experience accumulated throughout the various editions of the E-activities Microcredential, conceived within the scope of higher education training. This Microcredential has established itself as an innovative pedagogical proposal, with a significant impact on the qualification of educational practices, particularly regarding the use of digital technology.

The target audience for the Microcredential includes trainers, teachers from different areas and educational levels, as well as other professionals interested in the topic. Between 2022 and 2024, six editions were held, totaling 20 classes. A total of 645 students enrolled, of whom 353 were approved (a 55% approval rate). The Microcredential takes place over four weeks, using a model that prioritizes asynchronous activities, with two non-mandatory synchronous sessions.

The adopted methodology was qualitative, supported by a theoretical review, analysis of practical experiences, information gathering, identification of best practices, and empirical studies. The construction of the argumentative framework is based on the critical analysis of these sources and their articulation with the authors' practical experience. To this end, data collection was carried out using a satisfaction assessment instrument, which allowed for gauging the trainees' perspective regarding the training. This instrument was applied at the end of the course, after the submission of the final activities, and responding to it was optional. Student participation was generally high, which is justified by the fact that it was a short course with a clear objective of professional capacity building in the field of distance education.

To answer the research questions, action research was employed, as defined by Thiollent (2011), which presupposes the active involvement of the researchers in the reflective process alongside the

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participants. Action research constitutes a form of investigation based on collective self-reflection, promoted among members of a social group, with the aim of understanding and improving their own social and educational practices. Such an approach implies effective collaboration among all involved, making the participants co-investigators in the process (Tripp, 2005; Thiollent, 2011).

The implementation of the action research took place during the synchronous sessions held throughout the courses, continuously involving trainers and students. The feedback collected through an evaluative questionnaire at the end of each course was ongoing and served as the basis for progressive adjustments to the content and dynamics of each edition. The final evaluation of each course, combined with active listening during the sessions, allowed for continuous improvement of the micro-credentials, reinforcing the commitment to self-assessment and training quality.

For the purpose of reporting the methodology, the approach is intended to be descriptive of the training design and quantitative, analyzing the results of the satisfaction survey provided at the end of the training module. The questionnaire items allowed for assessing trainees' satisfaction with the quality of core aspects of the module, gathering their perception regarding their performance, and the transfer/applicability of competencies in their work context. A total of 312 people responded to this questionnaire.

5 MICROCREDENTIAL STRUCTURE AND DESIGN

The design of the training module "E-activities in Course Design" was organized based on a three-pillar framework: the Virtual Pedagogical Model (VPM), which emphasizes student-centered teaching, flexibility, interaction, and digital inclusion (Mendes et al, 2018); the theoretical principles of e-activity, highlighted in previous sections of this article; and the styles of virtual use (Barros, 2010).

From the perspective of styles, Barros (2010) understands that learning in a virtual environment has its own characteristics, and to address cognitive diversity, it is necessary to personalize the space and consider learning styles, since

> learning in virtual spaces involves a series of elements related to the concept and characteristics of the virtual: time and space, language, interactivity, ease of access to knowledge, and interactive audiovisual language as a form of ambient use of technology, meaning the habits and customs of using this new space (Barros, 2010, p. 87)..

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Thus, as can be seen in Table 1, different proposals for resources, e-activities, and assessment were used:

Quadro 1 - Formative Path: The Design of the E-activities Microcredential in Course Design

Semana	Atividade	Objetivos	Tipo exploração	Recurso	Avaliação
Week 1 Module Presentation and E-activity: Concepts and Foundations	Presentation	Introduce oneself, get to know course colleagues and instructors	Collaborative	Forum (Moodle)	No
	Learning Roadmap	Understand the learning objectives and how the training is structured	Individual	Book (Moodle)	No
	Forum – Learning Roadmap	Formulate questions about the learning roadmap	Collaborative	Forum (Moodle)	No
	Reading texts and watching video	Read and reflect on the studies conducted	Individual	PDF and YouTube	No
	Forum – E-activity: Concepts and Foundations	Synthesize the studies conducted through a publication, which can be a forum post OR concept map OR presentation	Individual/ Collaborative	Forum (Moodle)	Yes 4 points
Week 2 E-activities in Course Design	Reading texts	Read and reflect on the studies conducted	Individual	PDF	No
	Collaborative space	Collaborate with suggestions for activity proposals	Collaborative	Wall (Padlet)	Yes 4 points
Week 3 E-activities in the Design of Learning Strategies	Reading texts	Read and reflect on the studies conducted	Individual	PDF	No
	Forum	Consolidate and understand the role of e-activity	Collaborative	Forum	Yes 4 points

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		as a learning strategy			
Week 4 Design of an E-activity	Reading texts	Read and reflect on the studies conducted	Individual	PDF	No
	Design of an e-activity	Apply the knowledge learned in the development of an e-activity	Individual	Assignment submission (Moodle)	Yes 8 points

Source: The author

The training program covered theoretical and practical aspects and stipulated that, upon completion, participants would design an e-activity, integrating it into the themes and content to be developed in online courses, and would identify and systematize essential elements to consider when designing activities for teaching in DDL (Digital Distance Learning).de atividades para a lecionação em EaDD (Educação a Distância Digital).

6 RESULTS OF THE SATISFACTION QUESTIONNAIRES

This text presents the results of the Microcredential "E-activities in Course Design," an integral module of the Distance Education Training Plan (Plano de Formação em EaDD) offered by Universidade Aberta. Aimed at Portuguese higher education faculty and trainers, the training seeks to support the creation of online curricular units within their respective institutions.

The analysis developed here focuses on evaluating the results obtained throughout the editions of the training program. The data analyzed correspond to the editions held between 2022 and 2024, a period during which the course was offered to 20 cohorts, with an average of 25 participants per cohort.

The main objective of the questionnaire was to evaluate various qualitative aspects of the module, encompassing a detailed analysis of its structure and functioning to the quality of the resources and pedagogical strategies used. Elements such as learning resources, digital tools, proposed e-activities, platform usability, moderation and feedback from trainers, content provided, participation and discussions in forums and synchronous sessions, as well as self-reflection and self-assessment questions by the participants, were evaluated. In this article, the focus is particularly on the qualitative aspects emerging from this evaluation, seeking to understand how these contributed to the training experience within the context of the module.

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We highlight here the analysis of the aspects they considered most positive in the module. The indicators of the analysis performed follow.

6.1 Synchronous Sessions and Interaction

The synchronous sessions were highly valued by the participants, being considered one of the most positive aspects of the module. These sessions, held via the Zoom platform, enabled closer contact with colleagues and instructors, fostering a stronger connection to the course. Furthermore, they contributed to the creation of a space for enriching sharing and debate, reflected in the active interaction in the forums. The dialogue between trainees and the training team proved fundamental for deepening the understanding of the content and fostering a collaborative learning environment.

6.2 Digital Resources and Tools

One of the most valued aspects by the participants was the knowledge and exploration of new digital tools. The diversity of resources presented throughout the module allowed for the expansion of the range of options available for designing e-activities, with emphasis on tools such as Padlet and Lucidchart, which proved to be particularly useful. Many trainees mentioned the value of presenting and exploring resources they were previously unaware of, which significantly contributed to enriching their pedagogical practices in digital environments.

6.3 Module Organization and Structure

The clear organization of the module and the platform was highlighted as a positive point by the trainees. The ease of navigation, combined with the clarity of the proposed objectives, the adherence to deadlines, and the balanced distribution of tasks throughout the weeks, favored participant engagement. Furthermore, the early availability of activities allowed for better time management, making it possible to reconcile the demands of the course with other professional and personal responsibilities.

6.4 E-activities

The construction and structuring of e-activities were a central element of the module, providing practical learning about their design and implementation. Participants highlighted the concrete

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applicability of the content, emphasizing the importance of training in planning, the clarity of assessment criteria, and the possibility of applying theoretical concepts in real-world scenarios.

6.5 Feedback

The constant and personalized feedback, the care demonstrated by the trainers in monitoring the trainees' progress, combined with individualized attention and prompt responses, contributed to a positive training experience. The speed in evaluating e-activities and the e-moderation model adopted, especially in monitoring interactions in the forums, were equally appreciated.

6.6 Flexibility and Learning Pace

The time flexibility for completing the tasks. The possibility of self-paced learning allowed for better reconciliation with other professional and personal responsibilities. Furthermore, the structuring into short modules proved effective, as it adjusted to the available time of each trainee, making the training process more accessible and manageable.

6.7 Learning Environment Among Trainees

The collaborative environment, the sharing of experiences, and, to some extent, the spirit of mutual support among trainees and trainers created a climate of trust and mutual support. The emphasis on an approach centered on interaction, the exchange of knowledge, and the co-construction of knowledge was frequently mentioned as a strong point of the training.

6.8 Content and Materials

The clarity and relevance of the content presented in the module, along with the recommended bibliography and the supplementary materials provided, proved to be valuable resources, allowing for a deeper understanding and consolidation of the concepts addressed. The explanations provided during the synchronous sessions, as well as the reading of the suggested recommendations, helped to contextualize the theory and apply it practically, reinforcing the usefulness of the materials in the training process.

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6.9 Professional Development

The module provided significant learning about digital teaching and the planning of pedagogical strategies in virtual environments, allowing for a critical reflection on commonly adopted practices. This opportunity to re-evaluate and rethink the pedagogical approach was valued by the participants, who highlighted the broadening of their perspective regarding online teaching methodologies. The careful observation of the instructors' practices was enriching, allowing participants to learn not only from the content but also from the way experts conduct and structure the digital learning experience.

Thus, it was possible to analyze that, in line with current trends in Distance Education (DE) and qualitative assessment formats, the participants demonstrated positive feedback regarding the work developed. The perceptions collected align with the principles and best practices highlighted in recent literature on pedagogical design in online learning contexts, particularly those described by Moreira et al. (2020), indicating a growing appreciation for innovative approaches focused on interaction, flexibility, and the practical applicability of learning.

Regarding the aspects to be improved, we share a table summarizing the suggestions identified as relevant that were not, in fact, included in the course and are being considered for introduction.

Table 2 - Suggestions for improvement

Topics Addressed by Students:	**Main Suggestions for Module Improvement:**
Examples and Practice	Demonstrate how Moodle tools work and provide examples of good and poor e-activities. Include collaborative activities such as forums, wikis, and glossaries. Propose more practical activities related to the use of digital tools.
Time and Flexibility	Extend the module duration or allow more time to complete activities, especially for those with other responsibilities. Propose greater flexibility in submission deadlines, allowing tasks to be submitted until the end of the module. Consider an extension to consolidate learning, with more time dedicated to practice. Improve time management to allow trainees to explore content more deeply. Consider adding one more week to the module for greater exploration of e-activities.
Synchronous Sessions	Increase the number of synchronous sessions and make them more dynamic and interactive. Diversify the schedules of synchronous sessions to accommodate different participants' time zones.
Feedback and Assessment	Improve the assessment of e-activities, including continuous feedback and constructive criticism. Include peer-assessed activities to promote reflection and exchange of experiences.

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Articulation Between Modules	Improve the articulation between modules; strengthen the integration between the Digital Teaching in Networks and E-activities in Course Design course units.
Resources and Bibliography	Offer more bibliography in Portuguese or English, reducing the use of material in Spanish. Diversify content formats (videos, podcasts) instead of focusing solely on texts and PDFs.
Digital Tools	Present a greater variety of digital tools for online teaching.

Source: the author

This synthesis gathers the key suggestions, and we can observe that the lack of time reflects the personal dynamics of each participant, who frequently deals with multiple tasks. To improve the course, it would be essential to offer more options for digital tools and diversify the resources both on the Moodle platform and in the guidelines for carrying out the e-activities. Furthermore, there is a clear and constant need for more synchronous sessions, which would allow for closer interaction between participants and trainers. These sessions could detail the topics covered more comprehensively, offering trainees the opportunity to deepen their understanding and perception of the content.

They also emphasize the need for more in-depth and personalized feedback. This is, in fact, a mentoring practice on the part of the instructor; however, what they truly need is more individualized attention, focused on the specific difficulties they face—difficulties that are often not directly addressed in the content proposed by the course.

Something that surprised us considerably was the issue of using materials in Spanish, which was identified as a complicating factor. The reason we did not simply choose to remove or replace them is that a large part of the most relevant theoretical and practical production on the topic is currently available in Spanish, including pedagogical applications fundamental to understanding the content.

Regarding the applicability of the topic in the professional contexts in which the participants are embedded, we observed that 69.5% indicate being able to transfer the knowledge to their professional role and performance. This result aligns with one of the main objectives of the course, which prioritizes the dynamics and pedagogical methodology developed.

However, the 25.8% who responded "partially agree" reveal a data point that we must consider carefully, seeking to reduce it by offering more elements that favor didactic transposition.

According to the investigators' empirical analyses, this difficulty may be related to a lack of experience and the challenge of innovating in professional contexts marked by routines or deeply ingrained practices, often viewed as unquestionable standards or truths. This hinders the breaking of

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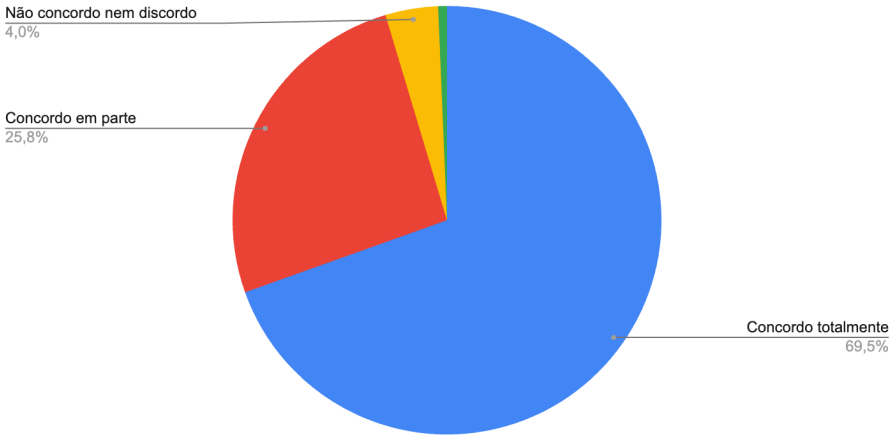
paradigms and the effort required to integrate new knowledge into professional practice. This barrier could be overcome by developing more activities that promote direct and contextualized action within the specific work reality of each student.

Figure 4 - I will apply what I learned in the e-activities module



Thus, regarding this issue, we found that the majority of trainees (95.3%) reported finding the module's content relevant, as they plan to incorporate it into their professional practice.

FINAL CONSIDERATIONS

Recent societal transformations have reinforced the urgency of investing in the qualification of higher education professionals, especially in the domain of digital competencies. In this context, the Micro-credential "E-activities in Course Design" (Microcredential “E-atividades no desenho de cursos”), developed by the Open University (UAb) as part of the Training Plan in Distance and Digital Education (Plano de Formação em Educação a Distância e Digital), stood out as a structured and high-quality training response. Aimed at higher education faculty and trainers, the initiative seeks to support the conception and implementation of online course units, promoting innovative pedagogical practices focused on the creation and application of e-activities.

The analysis of the data collected throughout the editions carried out between 2022 and 2024—totaling 20 classes, with approximately 25 trainees each—highlights the positive impact of the training. Trainees demonstrated not only a theoretical understanding of the concepts addressed but also the capacity for practical application through the creation of e-activities contextualized to their institutional realities. This aspect reveals the significant contribution of the micro-credential to the

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transformation of pedagogical practices by encouraging the planning of student-centered, interactive, digitally mediated activities aligned with the principles of the UAb (Open University) pedagogical model for virtual learning environments.

During the implementation of the micro-credential, several strengths were identified, such as the flexibility of the training, the immediate applicability of the content, the valorization of teaching practice, and the stimulus for pedagogical innovation. At the same time, important challenges emerged, such as the heterogeneity of digital literacy levels among trainees, the time constraints for active participation, and the need for greater individualized pedagogical support regarding concepts and familiarity with the online environment and its characteristics. Despite the challenges, the results obtained demonstrate the transformative potential of micro-credentials in teachers' professional development and in consolidating educational practices in the online environment.

The results obtained point to the potential of microcredentials as strategic instruments in the professional development of teachers, particularly regarding the updating of pedagogical and technological skills. Furthermore, they contribute to the consolidation of a culture of educational innovation and continuous training, aligned with the challenges and opportunities of higher education that is increasingly digital, flexible, and student-centered.

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