Teaching Culturally and Linguistically Diverse International Students in Open and/or Online Learning Environments: A Research Symposium

Learning and Development in Higher Education through Extension Action

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Abstract

In a pandemic context, insecurity in the face of challenges and adverse situations is experienced. It is important to revisit the training of professionals, to better prepare them to deal with new technological tools, in an educational and market ecosystem, innovating the concepts of learning in the digital age. This component favours students in the construction of knowledge, and not only in the accumulation of information. In this context, remote learning proves to be an effective and inclusive solution. While there are reluctant attitudes and difficulties with remote learning, there is an opportunity for students and teachers to explore and innovate in teaching-learning. This proposal brings the experience of stimulating the development of skills, through extension action, in higher education.

Keywords: extension action, digital competences, technological mediation, open education.

Introduction

Ensuring inclusive, equitable and quality education, promoting lifelong learning opportunities for all, is crucial for a sustainable development goal that guides educational actions around the world (United Nations, 2015). The digital medium becomes an essential vehicle to guarantee teaching-learning opportunities for everyone.

In a pandemic context, insecurity in the face of challenges and adverse situations is experienced. It is important to revisit the training of professionals, to better prepare them, and to deal with new technological tools in an educational and marketing ecosystem, innovating the concepts of learning in the digital age.

Professional development is an effort of continuous evolution, with a view to lifelong training. The carrying-out of activities and actions, in teaching, research, and extension, corroborate to promote the interdisciplinarity and multidisciplinary knowledge necessary for professionals in the digital age.

This paper aims to present the experiences with undergraduate students in Biomedical Engineering, at the Federal University of Pernambuco (UFPE). Reflections, as well as lessons learned, can be discussed with a view to the future that takes place in the labour market.

The work focused on the students' development of technical and digital skills that were being carried out as extension-project activities. The actions were guided by the need to provide opportunities for experiences where the student assumed a prominent role in situations of professional training and research.

After this introduction, the article presents the fundamental concepts, methodology, and results, respectively, and finally the considerations.

Literature Review

Allowing the integration of students and professionals from different areas of knowledge, through online digital platforms, to promote the debate and discussion of topics of interest, (especially in the areas of Biomedical Engineering aligned with the goals of sustainable development, such as improvement the quality of life), the extension project was developed. The project is engaged in open educational practices. This experience considered the European Framework for the Digital Competence of Educators (DigCompEdu), specifically for learners (Redecher & Punie, 2017).

The development of extension actions provides opportunities for research, improvement, and application of topics of interest related to education, health, and technology, using technological mediation. During the execution of the action, some results, considered important in the student's development throughout their university career, were observed. Two major products were developed: (a) holding open sessions focused on the debate of emerging areas of Biomedical Engineering; and (b) development and organization of a booklet with material investigated and prepared from the open sessions held.

The defined pedagogical actions mainly emphasized digital skills and using active learning. The activities were developed through project-based learning. Through the planned actions, students and teachers developed a set of activities that culminated in the holding of 8 open sessions, with the participation of professionals and researchers, and in the writing of a booklet with texts in the areas covered.

Methods

Important points to consider in the development of extension actions consist in providing a process to support the design of the desired solution, and the construction of learning objects or online products.

These actions require adapting the content and pedagogical scripts for the online platform, in addition to bringing usability, design, and user experience concepts as fundamental to the promotion of knowledge generation in multidisciplinary spaces (Welsh et al, 2003). Therefore, technological innovations in education have a fundamental role in the investigation of aspects that aim to involve students, qualify, and motivate teachers.

To achieve the objectives set out in the extension action, as protagonists of project-based learning, students performed the following flow of activities:

1. Define and select a professional, researcher or professor, to discuss the chosen subject area. Discussion sessions were held as a one-hour panel. At the end of each session, 15 minutes were set aside for questions and answers (Q&A).
2. Understand the content generation: it comprises the bibliographical review of the subject to prepare the whole material for the virtual session and for the booklet.
3. Definition of the roles of students responsible for the virtual session: Logistics for holding the open virtual session, promotional material on social media (cards), and content transition. The pedagogical strategies are clearly documented in this step, considering the course navigation and activities/exercises definition.
4. Development of the virtual session consisted of the implementation of all activities planned for the virtual session: presentation, space for questions and answers, attendance control, and session report.
5. Assessment of planned versus executed activities: revisits planning and analysis of achieved results.

Results

With the completion of the extension project, some points can be highlighted, as lessons learned, that should be actively considered in future projects. One of them would be the importance of structuring a team to support groups of students, both for the chosen research area and for technological mediation, is necessary to carry out the planned activities, which is the production of differentiated teaching materials suitable for online education. The other would be the need to train teachers and researchers to participate in online activities, which should focus not only on the use of virtual learning environments, but also on the differences in didactic-pedagogical mediation and in the evaluation system adopted.

This perception is a differential provided by the periodic monitoring and evaluation of the strategies of the activities developed by the actors involved in the online project.

To ensure the best application and gains related to online learning, it is important to understand the educational process, and carry out a more comprehensive assessment of the students, and, consequently, the personalization of education. In this context, some reflections are:

- How technological innovation is changing classrooms today.

- There is, indeed, a global competition between higher educational institutions and the target workforce.
- How to implement the adoption of technological innovation and digital inclusion; address characteristics of groups or individuals, specifically in virtual learning environments.
- How to provide tailored instruction to improve the quality and efficiency of learning and teaching.

Discussion and Conclusion

Technological advances and the identification of different pedagogical strategies are some of the challenges that were faced in the development of 100% online extension actions. As an example, there is the training of teachers/researchers for active and innovative methodologies; the main difficulty was the digital inclusion and the resistance of the e-learning technology. There is also the definition and structuring of the digital materials production process. It is very difficult to propose a generic process that meets all requirements, under different perspectives and needs, in virtual environments.

The use of online educational platforms enables the serialization of the training processes of professionals, from different areas, and speeds up the integration and access to technologies. Therefore, we can highlight:

- the importance of structuring a didactic transition team to support the professionals involved in the extension action in the production of differentiated teaching materials suitable for online education.
- the need for qualification of professionals involved in online action, which should focus not only on the use of virtual learning environments, but also on differences in didactic-pedagogical mediation and in the adopted assessment system.
- periodic monitoring of the professionals involved in the action, through planned and executed activities and any difficulties presented.

References

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