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INNOVATIVE PEDAGOGICAL PRACTICES IN PORTUGUESE SCHOOLS: FIRST STEPS OF A RESEARCH PROJECT

PRÁTICAS PEDAGÓGICAS INOVADORAS: PROPOSTA DE UM PROJETO DE INVESTIGAÇÃO

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Abstract

Mapping innovation is crucial in education to guide educators and policymakers to spread high-quality pedagogical practices. Improving learning with innovation in mind is required today. Although innovation is an emergent topic in the educational policy reforms around the world, and particularly in Portugal, more research is needed. This paper presents the research project "4A' model for Measuring Innovative Pedagogical Practices in Portuguese schools: Approaching, Assessing, Applying, and Amplifying". Inspired by the recent OECD report "Measuring innovation in education" and considering the current challenges that Portuguese schools face ensuring a more inclusive and innovative education, this project aims to measure and map innovative pedagogical practices in the Portuguese educational system, from elementary to secondary grade. A brief literature review, project plan, and some implications are presented.

Keywords: Innovation; Inclusive education; Pedagogical practices; School improvement.

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Resumo

O mapeamento da inovação é crucial em educação, de modo a informar os profissionais e políticos relativamente a práticas pedagógicas de elevada qualidade. Atualmente, melhorar a aprendizagem através da inovação é necessário. Apesar de a inovação ser um tópico emergente nas políticas educativas em todo o mundo, e particularmente em Portugal, mais investigação é indispensável. Inspirados no recente relatório da OCDE "Measuring innovation in education" e considerando os desafios que as escolas portuguesas enfrentam para assegurar práticas de educação mais inclusivas e inovadoras, desenhamos um projeto de investigação para medir e mapear as práticas pedagógicas inovadoras usadas no sistema educativo português, desde o 1.º ciclo ao ensino secundário. Este artigo apresenta o projeto de investigação "4A' model for Measuring Innovative Pedagogical Practices in Portuguese schools: Approaching, Assessing, Applying, and Amplifying". Apresentam-se uma breve revisão da literatura, o plano de investigação e algumas implicações.

Palavras-chave: Inovação; Educação inclusiva; Práticas pedagógicas; Melhoria das escolas.

1. Introduction

Mapping innovation is crucial in education to guide educators and policymakers to spread high-quality pedagogical practices. Improving learning with innovation in mind is required today. Innovation is a relevant topic in the educational policy reforms around the world (OECD, 2019), and particularly in Portugal (Alves & Cabral, 2018; Azevedo, 2016; Palmeirão & Alves, 2018). So it is crucial to in-depth knowledge about innovation in education to answer questions like (1) What is known about innovation in education? (2) Is it possible to measure innovation in education? (3) What is innovative in the Portuguese educational system? (4) What are the innovative pedagogical practices implemented by and in Portuguese schools? (5) What contextual and organizational factors are working as drivers of innovation? (6) How to scale up innovation in education? It is vital to analyze if institutions and actors have changed their beliefs and practices according to the new political framework and the ways and tools used by them

to implement a significant change in their teaching, learning, and assessment practices. Therefore, more research is needed to uncover these specific concerns.

In the Catholic Portuguese University, Faculty of Education and Psychology, Porto, the research group of Curricular Studies intended to contribute to this research scope. Our core mission is to promote innovation in education by exploring new angles and diverse methodologies for more engaging and inclusive learning, enhancing excellence in teaching and research, and improving higher-quality teacher professional training and development, converging the dialogue between researchers, professionals, and policymakers. This paper presents the research project "4A' model for Measuring Innovative Pedagogical Practices in Portuguese schools: Approaching, Assessing, Applying, and Amplifying", which aims to measure and to map innovative pedagogical practices in the Portuguese educational system, from primary to secondary level. It was inspired by the recent OECD report "Measuring innovation in education" (Vincent-Lancrin et al., 2019) and considering the current challenges that Portuguese schools are facing to ensure a more inclusive (National Assembly, 2018a) and innovative education (National Assembly, 2018b),

2. Literature review

Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all is at the heart of the 4th Sustainable Development Goal – SDG (United Nations, 2015). A high-quality education meets the academic and social learning needs of all the learners (European Agency for Special Needs and Inclusive Education, 2015), providing them, not only with discipline-specific knowledge and skills but also with a wide range of generic competencies (Dias & Soares, 2017; Soares & Dias, 2018). Accordingly, education should be concerned with citizenship and social justice, in which all individuals have equal opportunities to access and to be successful not only at school (Dias & Soares, 2017) but also in the transition to the labor market (Tavares, Soares & Sin, 2020). This holistic outlook of education places students at the center of their learning, empowering them to build their learning pathway (Soares & Dias, 2018). This implies a transformation in teaching-learning models, leading to a more equitable and participatory learning experience (Carvalho, Cabral, Verdasca & Alves, 2019; Committee on the Rights of Persons with Disabilities, 2016).

Aiming to achieve 4th SDG, education systems worldwide are implementing policy reforms in school curricula and teacher training (OECD, 2019). In line with other countries, in Portugal, since 2018, educational reform is under development, giving schools the possibility to manage their curriculum and change their pedagogical and organizational models (National Assembly, 2018b). Besides, Decree-law 54/2018 (National Assembly, 2018a) defines guidelines for assuring a more inclusive education for all students. Schools have, now, the opportunity to design their pedagogical responses, in a higher autonomous and flexible way, aiming for the success and inclusion of all students (National Assembly, 2019). Innovation in education appears, in this scenario, as an emergent topic. So it is needed to explore questions such (1) How to innovate in teaching and learn within the classroom? (2) How to innovate in the access and the use of learning resources? (3) How to assess innovation in education? How to evaluate its impact? (4) How to use technology to foster learning? (5) How to spread a culture of innovation for learning transformation? (6) What institutional and organization conditions work as facilitators and constraints of a culture of innovation? Accordingly, "*while it is easy to talk about innovation in education, it is a […] more difficult task to talk about how innovation is happening, and whether it is effective*" (Vincent-Lancrin et al., 2019, p. 3). In a recent OECD report (Vincent-Lancrin et al., 2019), innovation is defined as "*new or improved product or process (or a combination) that differs significantly from the previous products or processes, and that has been made available to potential users*" (p. 17). These products and new processes incorporate all aspects of the educational system, from the "*theory and practice, curriculum, teaching and learning, policy, technology, institutions and administration, institutional culture and teacher training*" (Serdyukov, 2017, p. 8). Innovation also concerns all educational stakeholders: the learner, parents, teacher, administrators, researchers, and policymakers, and could be assessed at different levels, from a local one to a multiple and a system-wider dimension. Accordingly, innovation in education is related to political reforms (Alves & Cabral, 2018; Azevedo, 2016; Palmeirão & Alves, 2018), organizational factors such as leadership and school strategic action (Carvalho, Azevedo & Vale, 2019), curricular dimensions (Carvalho & Azevedo, 2019; Soares, Cabral & Alves, 2019; Soares, Carvalho & Dias, 2020), technology-based education (Selwyn, 2016) and learning assessment methods (Castro & Soares, 2020).

One dimension to consider is the innovation in pedagogical practices – the focus of this research project. The "way" teacher "teaches" has a direct impact on the way students "learn" (Soares, Cabral & Alves, 2019). Pedagogical innovations may cover a large amount of teaching and learning strategies. Practices that deviate from the traditional lecture model and seek to develop high-level skills for students could be considered innovative (Harbour, Evanovich, Sweigart & Hughes, 2015), as well as new learning settings (Soares, Cabral & Alves, 2019), the use digital resources (Selwyn, 2016), and new instructional practices in reading, mathematics, and science or homework (Vincent-Lancrin et al., 2019). This broad range of concept innovation leads to difficulties regarding the definition of innovative pedagogical practice and how to assess and measure it and how to implement it in the classroom effectively.

In an attempt to present a map of innovative practices, Paniagua & Istance (2018) builds up a comprehensive framework organized in six clusters of innovative approaches: i) Blended learning; ii) Gamification; iii) Computational thinking; iv) Experiential learning; v) Embodied learning, and vi) Multiliteracies and discussion-based teaching. Each cluster is defined in terms of its impact on learning and identifies examples of how to put it into practice. The six clusters of innovative practices are presented in the table above (table 1).

Table 1. Six clusters of innovative practices

Innovative practice	Aim	Primary forms, examples, discrete practices
Blended learning	Seeks to use the potential of new technology to offer more individualized teaching and calls for further class time use.	1. Inverted/flipped classroom 2. Lab-based model 3. "In-class" blending
Gamification	Use of video games in teaching due to how they can make learning fun and engage.	1. Gamification 2. Game-based learning 3. Serious games
Computational thinking	Computational thinking intersects mathematics, information, and communications technologies (ICT) and digital literacy. It aims to address mathematics as a coding language and looks at ICT as a platform for developing problem-solving reasoning in students. It also takes programming and coding as a new form of literacy.	1. Browse the Internet for schoolwork 2. Chat online at school 3. Post work on the school's website 4. Play simulations at school

Innovative practice	Aim	Primary forms, examples, discrete practices
Experiential learning	Focuses on the the importance of the discovery process and value the personal negotiation of meaning, as well as more widely on the importance of understanding and delivering learning environments as holistic experiences requiring the active experimentation of learners with their peers.	1. Project-based learning (PBL) 2. Inquiry-based learning 3. Outdoor learning 4. Service-learning
Embodied learning	Focus on the non-mental factors involved in learning, which signal the importance of the body and feelings. Embodied pedagogies develop and exploit the idea of situated cognition, and highlight the paramount role of social, creative experiences and active student involvement to promote knowledge acquisition.	1. Arts and design-based learning 2. New approaches to physical education 3. Experimentation and design thinking
Multiliteracies and discussion-based teaching	While multiliteracies focus on the number and diversity of platforms and languages that learners require to become literate, discussion-based teaching revolves around the critical and cultural variables through which learners actively construct texts' meaning.	

Despite this crucial contribution, there is still a need to identify and map innovative practices to generalize and scale up to diverse contexts and populations. It is also essential to develop the ability to select good innovative practices that meet various contexts and all student's needs. Consistent and reliable measurement of innovation allows a more robust international education base. It will enable policymakers to mobilize resources based on their impact on students' learning and school improvement (Vincent-Lancrin et al., 2019).

The limited knowledge about innovative practices is particularly significant in Portugal, with a lack of studies regarding this topic and the absence of an empirically validated instrument to measure innovation. Accordingly, although innovation in education is on the political agenda, little is known whether Portuguese schools are effectively innovating, which innovative practices are being implemented, or the stakeholders' perspectives and beliefs regarding this topic. This scenario offers this project a crucial window of opportunity to provide evidence-based recommendations for improving Portuguese education.

3. Research project

The *4A' model for measuring pedagogical innovation project* is proposed, aimed at answering five research questions regarding the analysis of national policies, the mapping of pedagogical practices at the country and local levels, and identifying the drivers of innovation in schools.

3.1. Research questions

Q1. What frameworks exist about innovative pedagogical practices?

Q2. How to put into practice innovation in education, considering curriculum designing and development, teaching and learning strategies, and pedagogical assessment?

Q3. What are innovative pedagogical practices being implemented in Portuguese schools?

3.2. Research plan

The 4A' model is organized in 4 dimensions: i) Approaching, ii) Assessing, iii) Applying, and iv) Amplifying. Table 2 describes each dimension in terms of research steps.

Table 2. Research steps of the 4A's Model

1. Approaching. Defining and validating an analytical model for the measurement of pedagogical innovation at schools
1.1 Literature review for the definition of a conceptual model.
2. Assessing. Measuring pedagogical innovation at the national level
2.1 Questionnaire drafting and distribution to all schools in Portugal and results analysis
3. Applying. Measuring pedagogical innovation at the local level
3.1 Focus group with key actors: i) teachers, ii) students, and iii) parents
4. Amplifying. Results dissemination and good practices sharing
4.1 Creation of a Resource center
4.2 Creation of a professional learning community of active players on innovative pedagogical practices

The project is based on a mixed methodology, integrating quantitative and qualitative data collection and analysis (Creswell, 2014), combining multiple data sources and research methods.

4. Conclusion

This project has a clear relevance in the current Portuguese educational scenario, in which schools are challenged to innovate their teaching-learning models and their ways of working. Few national studies have been carried out regarding this topic, and there is a lack of empirical instruments and tools to assess innovation in Portuguese education. Several implications derive from this project, regarding policy and theoretical contributions and practical recommendations. Policy implications come from how innovation is regarded in this project, along with the educational system, demonstrating the interrelations between all levels of analysis (international, national and local), all educational dimensions (institutional and organizational factors, curriculum development and teaching practices) and all educational stakeholders (principals, teachers, students, parents, researchers, and policymakers). A comprehensive framework of innovation in education will be designed, considering literature contributions, international recommendations, and national policies regarding innovation. In terms of practical recommendations, this project will expand pedagogical innovation's effectiveness for large-scale dissemination, helping teachers, schools' principals, and policymakers navigating the innovation landscape. The creation of a resource center, disposing tools for professional learning, such as a specific toolkit for implementing pedagogical innovation in the classrooms, will support teacher professional development and enhance their practices.

The originality and the accuracy of this research should be stressed as the new model for assessing innovation proposed (4A' model) and an original instrument to be used in assessing pedagogical innovation in the Portuguese schools.

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