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<a> SOCIAL INNOVATION IN EDUCATION

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<b> Introduction

Conceptualizing social innovation in formal education has become a very difficult task, as there are many perspectives and types of education involved. Despite many efforts to delimit this concept, it is true that it is a field in search of common ground in understanding, identifying and integrating different types of social innovation in education. Some international organizations have focused on measuring innovation, such as the implementation of technology in classrooms and schools (OECD 2014; OECD 2016; Vincent-Lancrin et al. 2019), or in developing observatories of technological transformation in education (UNESCO 2021), while other perspectives have focused on the governance of innovation in education (Cerna 2014).

Social innovation in higher education institutions show the current mission of universities to enable better forms of knowledge transfer to society (→ SOCIAL INNOVATION AND ITS ACTORS: THE ROLE OF UNIVERSITY RESEARCH), e.g. what is currently done through research transfer offices or science shops in universities (Brinckmann, Roessler and Ulrich 2021). Recent research recognizes that higher education institutions are changing and that universities need to play a more active role as intermediaries and agents of social change (Howaldt et al. 2022; Caro-González and Anabo 2020). Today, many universities have developed and implemented new curricula and new strategies for teaching social innovation (Alden Rivers et al. 2015).

This perspective of social innovation in higher education is for many researchers a perspective with a strong focus on social entrepreneurship and social innovation curricula in universities (Wihlenda et al. 2020; Unceta et al. 2021). However, this perception may be not sufficient to understand the full picture of social innovation in education, as it lacks a link to engagement with communities and non-academic stakeholders (e.g. grassroots initiatives outside the formal education system). Therefore, there is a strong need to define the properties of social innovations in education, differentiating between different types of social innovation in education. Furthermore, it is necessary to create better ways of transferring research from universities to society and from society to universities, as well as to integrate innovation outside the formal education system into their research and transfer activities.

International research results from a global mapping of social innovations in education (Schröder and Krüger 2019) show, for example, a very low commitment of higher education institutions to engage social innovation partners compared to non-governmental organizations, businesses, public institutions and foundations (Anderson et al. 2018). Other studies present examples of innovation in education and lifelong learning in different countries, aiming to improve skills, competences and respond to unemployment or skills shortages (Kapoor et al. 2018. Similarly, a research at the regional level, shows examples of community involvement in education and the development of new forms of collaboration with government, business and civil society (Maldonado-Mariscal 2017). We recognize that social innovation in education requires more than new technological innovation in the classrooms, new curricula and new educational reforms. Therefore, to better understand social innovation in education, we provide a definition of social innovation in education and different dimensions of social innovation in education to contribute to this fields.

<b> Key findings

<c> Dimensions of social innovation in education
In social innovation research, at least four dimensions have been identified: individual, network, organization and system (Nicholls et al. 2015, p. 4). Referring to education, we focus on three dimensions identified in the literature specific to social

innovation in education (Schröer 2021; Torres 2000; Maldonado-Mariscal 2017) serving for a better understanding of the field of innovation in education: level of innovation, type of education where innovation emerges and type of social innovation identified in education.

Level of Innovation

In terms of the level of innovation, there is a macro, meso and micro level of innovation in education systems. At the macro level we can find a legislative framework (Schröder 2012), such as reforms and change in institutional regulations. While with the meso level, we refer to change in educational and learning models (Schröer 2021) or changes in educational structures (Schröder 2012). Finally, at the micro level, changes occur at the local level with greater involvement of educational and community actors. Some scholars see innovation in learner behaviour (Schröder 2012), while others explain the level of innovation as 'interventions from below', thus differentiating reforms from innovations (Torres 2000).

Type of Education

When referring to the type of education in which innovation takes place, there is innovation in both formal and non-formal education. In formal education, innovation is identified within higher education institutions, vocational education and training (VET) and basic education. In non-formal education, innovation is recognized within alternative educational programmes or initiatives; for example, by 'repairing' system failures or taking care of disadvantaged groups and lifelong learning improvement (→ SOCIAL INNOVATION AS REPAIR OF SOCIAL ORDER). In order to advance the understanding of social innovation in different types of education, we suggest that the main focus should be on how to identify and integrate social innovation much more in formal education systems, so that even innovation in informal education will gain acceptance and create a new approach for the modernization of different education systems and areas.

Types of Social Innovation in Education

Some of the key types of social innovation in education identified through empirical research are as follows: a) societal challenges and social demands, b) concepts and understanding, c) resources, capacities and constraints, d) governance, networks, actors, e) process dynamics, and f) institutions (Behrend et al. 2022; Howaldt et al. 2017; Schröder and Krüger 2019).

Against this backdrop and based on the findings of a mapping of social innovation initiatives around the world[1] authors identified a typology of social innovation in a way that social innovation initiatives may affect the formal education system through four different ways: transforming, modernizing, repairing, and separating (Rabadijeva et al. 2018). Transforming refers to change the educational system radically. Modernizing refers to improve existing structures into better ones according to the current needs. Repairing refers to grassroots initiatives that pursue to work on failures of the system. Finally, separating, refers to an antagonize initiative parallel to the system, which creates an own structure but may coexist with the original system (Rabadijeva et al. 2018, pp. 86–87). Other studies show examples of innovation in education in European countries, focusing on lifelong learning (Kapoor et al. 2018). In regions such as Latin America, there has been extensive research and documentation of case studies (see Rey de Marulanda and Tancredi 2010; Blanco and Messina 2000). In Brazil, relevant case studies show examples of community participation in education through the creation of new networks and forms of collaboration (Maldonado-Mariscal 2017).

Nonetheless, more empirical research is needed to identify different types of social innovation in education, their integration in formal education systems and to better understand the scale of innovation in education and the creation of networks and co-creation processes across different education levels (primary, secondary, tertiary education). Particularly to promote cooperation of grassroots initiatives and the education system not from an institutional perspective but from a learners' perspective (Schröder 2012). Generally, the main actors involved in social innovation in formal education are NGOs, universities, communities, schools, policy makers, and foundations (Maldonado-Mariscal 2017), while in VET, actors involved are usually companies, schools and communities, but also communities of practice and policy makers (Hillier 2009).

<c> Conceptualizing Social Innovation in Education
We define social innovation in education as new social practices in education (Howaldt and Schwarz 2010; Schröder and Krüger 2019), new forms of collaboration (Maldonado-Mariscal 2017), the creation of new institutions (Hämäläinen and Heiskala 2007; Loogma et al. 2013), and the creation of alliances and networks of different actors (Kesselring and Leitner 2008, p. 18) who previously did not

collaborate with each other. One or a combination of all these new practices and networks drives change not only in educational institutions, but also in the role of actors in the education system and in society (Maldonado-Mariscal, 2020).

In vocational education and training (VET) the literature shows that social innovation can be seen as new institutions (Halász 2018); new teaching methods or curricula (Halász 2018; OECD 2014; Hillier 2009); new school models between VET schools and enterprises (Haughey 2015), or new extended networks, by developing external relationships with stakeholders (Hillier 2009; Halász 2018). Whereas educational innovation in companies refers to mutual learning between employees, trainers and developers of new technologies, usually through a change in the mindset that education and learning occur only in one direction (Kohlgrüber et al. 2021). Because of the emerging relevance of vocational education and training in companies for the digital and green twin transition[2], the European Union has set up several initiatives to bring together all the relevant stakeholders in a common social innovation process of re- and upskilling for the digital and green transition: namely the New Skills Agenda, Sectoral Skills Blueprints, and the Pact for Skills to foster innovation in education across Europe. Similarly, learning processes in educational organizations refer not only to educational processes within one organization, but also between different organizations (Schröer, 2021).

Some researchers have launched a debate on social innovation in education to foster new policy ideas and a vision for the future of social innovation in education in the European Union (Giesecke and Schartinger 2021). This debate on social innovation in education shows that, when looking for a definition of social innovation in education, it is necessary to differentiate between innovation *in, for* and *by education* (Giesecke et al. 2020, p. 12). This means that there are different types of social innovation related to education. Firstly, social innovation in education refers to those innovations that take place within the education system. Secondly, social innovation by education refers to such innovations that aim at social change, developed by educational actors, e.g. students, teachers. Finally, social innovation for education refers to innovations that aim at a better education system, but the actors involved in them are not part of the education system (Giesecke et al. 2020, pp. 14–15). In this sense, organizational education researchers have identified a link between social innovation in education and innovation in organisational education. In a recent memorandum, they identified key dimensions of learning research in, by

and between organizations (Göhlich et al. 2018). This shows an interrelation between organizational education and social innovation research interested in new organizational structures for social innovation education.

<b> Critical reflections and outlook

Faced with the concept of social innovation and its relevance for education, almost all actors of the education system and beyond realized the lack of reflection and integration of social innovation in education. On that premise, one of the main research questions of social innovation in education becomes how to analyse educational innovation with a *systemic* approach?

Different literature suggests that in order to identify social innovation in education it is necessary to study and observe systemic changes in education. Systemic changes involve changes in beliefs, norms and institutions (Hämäläinen and Heiskala 2007; Loogma et al. 2013), new grassroots initiatives (Nussbaumer and Moulaert 2004) and co-creation practices (Caro-González and Anabo 2020). This means that social innovations in education do not occur as isolated events, but are often the result of a cyclical process of social movements, innovations, reforms and radical changes, leading to institutional and social changes (Maldonado-Mariscal 2020).

International research has mapped different innovative educational practices around the world and categorized them especially into new forms of education, new learning strategies, new arrangements, new collaborations and networks (Schröder and Krüger 2019). However, increased theoretical and empirical research on social innovation in education is crucial: Research that shows evidence of how innovation in education occurs, how actors co-create new models of education, how innovation networks in education are built and what new forms of multi-governance are being implemented for different reforms and in different contexts.

In addition, it is necessary to reflect first on what kind of innovation in education exists, where we can find it and what its properties are. We raise this point as very relevant, as social innovation in education is not only found in higher education institutions or entrepreneurship labs, but in local communities with daily challenges in education and society. Therefore, the role of civil society in educational innovation is crucial for modernizing the formal education system in the sense of changing social practices to solve educational demands and challenges in a broader way. This should include methods of co-creation of better solutions with different stakeholders,

new ways of organization, and collaboration. The role of institutions is crucial in enabling or blocking social innovation (Cajaiba-Santana 2014), so we need a better understanding of institutional innovation and multi-level and multi-stakeholder governance across the different areas and responsibilities of education. This is needed not only to give leeway to new solutions within and beyond the formal education systems but foster the acceptance of social innovations for the education sector as such, and improving innovation processes at local, regional and national levels.

<b> Notes

[1] See https://www.socialinnovationatlas.net/
[2] See https://publications.jrc.ec.europa.eu/repository/handle/JRC129319

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