



Transforming Educational Research

Realizing Equity and Social Justice Worldwide



**Edited by Gonzalo Jover, Mustafa Yunus Eryaman,
Ingrid Gogolin, and Liesel Ebersöhn
with Stephan Dippenaar**



TRANSFORMING EDUCATIONAL RESEARCH

In an era marked by both persistent and emerging challenges, *Transforming Educational Research: Realizing Equity and Social Justice Worldwide* offers a comprehensive exploration of the dynamic landscape of education and educational research. It delves into the multifaceted issues faced by educators and policymakers worldwide, from the disruptions caused by the global pandemic to the rapid integration of digital technologies.

With contributions from diverse regional, theoretical, and methodological perspectives, this volume provides insights into contemporary educational strategies and practices, the crucial role of socio-emotional development, the transformations occurring in higher education, and the impact of global educational policies. It is organized into four thematic clusters, each addressing a specific dimension of the challenges faced by education systems globally. The first cluster focuses on educational strategies and practices, examining approaches to creating conducive teaching and learning environments. The second cluster highlights the socio-emotional dimensions in education, emphasizing the importance of fostering emotional well-being and cultural understanding. The third cluster explores the complexities of higher education, particularly in the context of sustainability, digital transformation, and academic publishing. The final cluster delves into policy perspectives in education, analyzing the influence of globalization and the implementation of learning theories.

By fostering dialogue and critical reflection, this book offers a rich tapestry of insights into the common challenges faced by education systems worldwide. It serves as a valuable resource for educators, policymakers, researchers, and anyone interested in creating equitable, inclusive, and effective education systems for all.

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1

INTRODUCTION

*Gonzalo Jover, Mustafa Yunus Eryaman,
Ingrid Gogolin and Liesel Ebersöhn*

In recent years, the fields of education and educational research have witnessed transformative changes driven by both longstanding and emergent challenges. From the disruptions caused by the global pandemic to the rapid integration of digital technologies, educators and policymakers worldwide are navigating a complex landscape. This volume brings together a diverse collection of scholarly works that address these multifaceted issues, offering insights into contemporary educational strategies and practices, social and emotional development, higher education transformations, and global educational policies. This volume includes four thematic clusters with contributions from different regional, theoretical, and methodological perspectives, addressing different dimensions of the challenges that education systems around the world nevertheless have in common.

Thematic Cluster 1: Educational Strategies and Practices

In response to the challenges facing education systems, research and development focus not only on teaching and learning but also on developing strategies or reviewing existing strategies aimed at creating a teaching and learning environment that is conducive to education. The three contributions in the first thematic cluster – “Educational Strategies and Practices” – are focused on this facet of educational research. Their common guiding question is directed at the effects of activities intended to have a positive influence on the educational careers of children and adolescents – even or especially when not everything flows well, and obstacles have to be overcome. Three papers are included in this cluster. Whereas the first paper (Chapter 2: “Grade Repetition and Collaborative

Problem-Solving in PISA”) is based on an analysis of existing large-scale data, Chapters 3 (“Framework of Good Practices for Positive Behavior Approach [PBS] Implementation”) and 4 (“A Pedagogical Model of Youth Empowerment”) present the development and examination of an intervention, respectively, a model by means of which resources that support learning can be developed. Chapter 2 deals with grade repetition – a measure that is used in practice worldwide but has traditionally been controversial in regard to its benefits for promoting the performance of children and young people. Grade repetition, the strategy to withhold students for one year, is applied in many countries in case of a student’s academic failure. The question, however, of whether this strategy meets the intended aim has not yet been answered conclusively. Some studies show that performance gains are low or nonexistent after grade repetition, whereas other studies find satisfactory effects. The risks triggered by the measure include adverse effects on self-confidence and well-being at school, which might cause more negative effects on performance than the additional time for learning can compensate. In their contribution, the authors Andriele Ferreira Muri Leite, Patricia Vohl, and Natalie Loye took up this problem from a microeconomic perspective and with quantitative methods. Based on data from PISA 2015, they explored the relationship between grade repetition and performance by analyzing the data on collaborative problem-solving a competence combining cognitive and social capacities. Their analysis shows that the effects of grade retention differ considerably with respect to the age group of students. For students who repeat at the primary school level, the effects on performance appear to be negative rather than supportive. Furthermore, their analyses support the finding that retention for students from socioeconomically advantaged families seems to be mainly determined by academic ability. For those from socioeconomically disadvantaged families, however, other factors, in addition to academic ability, seem to determine retention decisions. The authors expressly point out that their results do not provide a final judgment on grade retention – but it does shed light on undesirable negative consequences of this practice.

Chapter 3 is dedicated to the development and first application of a “Framework of Good Practices for Positive Behavior Approach (PBS).” This research is based on an ERASMUS+ project, i.e. financed by the European Union; the project was carried out in Portugal and Italy. The authors Mónica Silveira-Maia, Manuela Sanches-Ferreira, Silvia Alves, Miguel Santos, Giuseppe Chiazese, Gianluca Merlo, and Antonella Chifari take expert consensus about positive student behavior as an element of potential educational success as the starting point of their approach. Strategies for behavior management and training of positive behavior have been developed, intending to support overall learning opportunities and academic achievement. The “PBS” belongs to these activities: a proactive system for supporting students’ prosocial behaviors rather than applying reactive strategies for specific misbehaviors. The positive effects of the approach

could already be demonstrated. Now, the authors looked for indications of how the concept could be successfully disseminated, implemented, and sustained. They carried out a Delphi study, which included 30 experts from six European countries, looking for a consensus on how the concept could be successfully disseminated and implemented. The procedure resulted in a pool of key elements defining the successful implementation of PBS, highlighting the importance of schools' reflection on their behavior-related policies, the collaboration of teaching staff with respect to principles of functional behavior assessment within classroom practices and the curriculum, and on strategies of empowering students for participation in school life and governance, thus strengthening their feeling of belonging. The authors point out that further studies with close connections to operating schools are needed to determine whether the identified principles actually represent a *general* consensus and how, in the positive case, they can be translated into everyday school practice.

In Chapter 4 of the first thematic cluster, we leave the space of formal education in schools. The authors Pere Soler-Masó, Xavier Úcar, and Pilar Rodrigo-Moriche present their pedagogical model of youth empowerment, which is based on three consecutive research projects on the topic, carried out in Spain. The model intends to provide a framework that allows the analysis and pedagogical design of activities fostering youth empowerment. The authors explain that this term has gained particular attention in social pedagogy but lacked clarity of meaning. Based on reviews of academic literature, they developed a definition that is fundamental for their model, focusing on "spaces," "moments," and "processes" of youth development that potentially support empowerment. On this basis, they develop an inventory of dimensions and indicators of youth empowerment that can serve to develop respective projects as well as evaluate them. This model was presented to experts for a preliminary review of its validity with respect to intelligibility and clarity, relevance for the research area, and progression. The next step in the development of the model is now its presentation in this volume, opening up the possibility for a global community of education researchers to engage in critical review and, if necessary, modification and adaptation to social pedagogy research and development needs in different contexts.

Thematic Cluster 2: Socio-Emotional Dimensions in Education

The second thematic cluster, "Socio-Emotional Dimensions in Education," brings to the fore the affective, relational, and cultural domains relevant to enabling quality education. The cluster encompasses three papers (Chapters 5–7): challenge, change, and uncertainty – whether global or local – are part and parcel of education. The evidence shared in the second cluster papers respectively elucidates findings on the pertinence of fostering (i) socio-emotional competence

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of primary school students, (ii) robust linguistic diversity practices in early childhood classrooms, and (iii) a repertoire of artistic competences to promote teacher well-being.

In Chapter 5, Christine Schmid, Nanine Lilla, Helvi Koch, and Marianne Schüpbach report on the consequences of school closures during the COVID-19 pandemic on the socio-emotional competence of Grade 3 and 4 primary school children in two cities in Germany. This survey study found that irrespective of socio-economic conditions, the acute disruption had a negative effect on the optimism of students – with lower overall levels of hope and enthusiasm for life. However, in the face of the acute shock of pandemic-related school closures, students accustomed to chronic challenges associated with lower socio-economic conditions reported better relationships with adults, as well as higher levels of perseverance. Students from more privileged socio-economic backgrounds reported lower action orientation and optimism than their counterparts from disadvantaged conditions. The evidence has implications for curriculum development and teacher education. Teachers' preparation needs to include knowledge of assessing the socio-economic conditions of students to tailor socio-emotional learning opportunities. In addition, the way in which challenge – whether acute or chronic – broadens and builds (Fredrickson, 2013) socio-emotional competence pays lip service, at least in part, to current notions of a fragile, needful post-pandemic BANI (Brittle, Anxious, Non-Linear, Incomprehensible) generation (Zakharov, 2022).

The opportunities afforded by having linguistic diversity in early childhood education spaces are the topic of investigation foregrounded by Lim Boo-Young in Chapter 6. Using systematic classroom observations of three- and four-year-old children, the investigator compares the activity involvement and oral language use of Burmese, Spanish, and English-home language speakers. The study found significant variability in the way that these young children engaged in learning and communicated in group settings when following a particular extended educational program (Head Start). Laudably, the study provides valuable educational research insights for an underrepresented population, namely children from Myanmar. In this study, in group settings, children (and especially girls) with a Burmese language tradition tended to listen more to teachers, engaged more in learning opportunities, and demonstrated less acting-out, fussy behavior. Overall, this language group spoke less – even in their home language. Findings have implications for teacher preparation to enable inclusive classroom discussions and engagement. As the author notes, sociocultural knowledge may add understanding to values, beliefs, and practices that underpin language performativity.

In Chapter 7, the last of the cluster two papers, Carmen Urpi, Carmen Basanta, and Marisa Musaió use a scoping review to investigate how forging a repertoire of creative, artistic competences may serve as a resource to

buffer against teacher burnout and promote teacher well-being. Their work is meaningful for the growing worldwide body of knowledge on teacher resilience (Madalińska-Michalak & Flores, 2024). They map evidence on the relationship between creativity and teacher burnout between 2010 and 2023. The authors foreground the importance of (i) including arts-based approaches in teacher pre-service and in-service preparation, (ii) strengthening appreciation of creative self-development practices in teacher well-being agendas that buffer against burnout, and (iii) the content of arts education per se. This chapter elucidates evidence that the strengthening of artistic creative competences has a reciprocal effect on enhancing socio-emotional competence – the combination of which is beneficial to both buffer against teacher burnout as well as promote occupational teacher well-being.

The crux of the second thematic cluster is to bring the underrepresented socio-emotional and sociocultural dimensions of education into the center of education research and practice conversations. The three papers provide evidence that rather than a nice-to-have “soft skill,” socio-emotional competence is an essential protective resource to support the well-being of students and teachers. The chapters demonstrate that socio-emotional competence builds capacity in the education space to absorb and adapt to challenges with transformative promise to attain positive learning and well-being outcomes – despite perceived barriers.

Thematic Cluster 3: Higher Education and Organizational Change

The third thematic cluster, “Higher Education and Organizational Change,” focuses on significant trends and challenges within higher education, particularly in the context of sustainability, digital transformation, and the complexities of academic publishing. This cluster comprises three key papers (Chapters 8–10), each of which provides in-depth insights into these pressing issues. Overall, the third cluster provides valuable insights and practical recommendations for higher education leaders, policymakers, and researchers. By addressing the critical issues of sustainability, digital transformation, and academic publishing, these chapters contribute to a deeper understanding of the evolving landscape of higher education and offer pathways for positive organizational change.

The first chapter (Chapter 8), “Sustainability and Digital Transformation in Higher Education: An International Comparative Study of University Strategies on Organizational Change,” offers a comprehensive analysis of how European higher education institutions are adapting to the dual imperatives of sustainability and digital transformation. The authors, Julia Elven and Jörg Schwarze examine, explore how these goals are strategically integrated within higher education institutions, highlighting successful strategies and common challenges. Through

detailed case studies of universities from various countries in Europe, this chapter illustrates the diverse approaches and outcomes influenced by institutional contexts. The analysis delves into the organizational changes required, such as shifts in governance, curriculum design, and stakeholder engagement. By comparing strategies across different institutions and countries, this chapter identifies best practices and areas for improvement, providing valuable insights for higher education leaders.

The second chapter (Chapter 9), "Elite, Open Access, or Predatory Journals? Conceptualizing the Full Spectrum of Global Academic Publishing in Higher Education," critically examines the landscape of academic publishing. The author, Ryan M. Allen, provides a detailed classification of different types of journals, describing their defining characteristics, advantages, and potential pitfalls. He discusses the implications of journal choice for researchers, particularly in terms of visibility, credibility, and career advancement, while addressing the ethical considerations involved. This paper offers a global perspective, highlighting variations in academic publishing practices and challenges across regions and disciplines. The rise of predatory journals and their impact on academic integrity are key issues explored. The article examines the growth of predatory publishing within the context of globalization and the open-access movement. It highlights the significance of this issue for the field of education, utilizing bibliometric analysis and theoretical arguments to support its claims. Policy recommendations are provided to support ethical publishing practices, enhance research quality, and protect researchers from predatory practices.

The third chapter (Chapter 10), "Nodes and Nets in Educational Research Communication and Organization – An International Mapping of Educational Research Publication," maps the networks of educational research communication and organization in Germany, Italy and Sweden. Using bibliometric tools and network analysis techniques, the authors, Barbara Gross, Sverker Lindblad, Edwin Keiner, Katarina Samuelsson, and Thomas S. Popkewitz, identify major nodes and influential networks in educational research in these countries. The authors then discuss, from theoretical and methodological perspectives, the potential and constraints in generating and applying knowledge contributions. The findings reveal a blend of international and national trajectories alongside nationally focused intellectual traditions.

The authors further explore the dynamics of collaboration in educational research, highlighting interactions and knowledge sharing among researchers from different regions and disciplines. The analysis identifies trends in publication practices, such as the rise of interdisciplinary research, the impact of digital technologies on research dissemination, and the role of open-access publishing. The authors discuss the implications of their findings for research policy and practice, offering recommendations to enhance collaboration, improve the

dissemination of research, and support the development of robust research networks.

The third cluster emphasizes the interconnected nature of contemporary challenges in higher education and underscores the need for holistic and strategic approaches. The integration of sustainability and digital transformation within universities is crucial for maintaining relevance and effectiveness in the 21st century. This integration requires not only technological upgrades but also fundamental changes in governance, curriculum, and stakeholder engagement. The complex landscape of academic publishing, with its significant implications for researchers and institutions, highlights the necessity for policies and practices that support ethical publishing, enhance research quality, and protect researchers from predatory practices. The mapping of educational research networks reveals important patterns and trends that can inform policy and practice, stressing the importance of strengthening collaboration and improving research dissemination to advance knowledge and address global educational challenges.

Thematic Cluster 4: Policy Perspectives in Education

Political, economic, and cultural globalization is driving the convergence of educational systems without the need for direct normative action by international agencies (Jover & González-Delgado, 2023). Cluster 4 examines some of these processes in relation to vocational education and training, the identification of expert teachers, and the implementation of learning theories. The cluster encompasses three papers (Chapters 11–13).

In the first chapter (Chapter 11), “Practice versus Theory – Is There Competition between Academic and Vocational Qualifications? Empirical Results from the German Labor Market”, Silvia Annen, Julia Hufnagl, and Michael Tiemann analyze the dichotomy between academic education versus vocational education and training, taking the situation in Germany as a research case. The authors use rational choice theory, human capital theory, and segmentation theory as frameworks for interpreting the choices of subjects and firms, using a mixed qualitative and quantitative research approach. Three research questions are targeted: (i) For what reasons do young people prefer certain qualification paths over others, and are there industry differences in this respect?; (ii) Are there empirically measurable differences in labor market outcomes (especially in terms of income) between vocational and academic education?; and (iii) Which occupational fields are characterized by competitive situations between vocational and academic education? Results indicate variations in pathways to qualifications and attitudes towards competition among vocational and academic skills within different industries. In terms of employment market use, the study reveals that personal factors account for a smaller percentage of income variability compared to larger-scale factors. Usability in the educational

choices made by individuals in vocational education and training and higher education is an important factor in the labor market. Simultaneously, individual income is minimally affected by personal career goals and socio-demographic factors. Instead, individual income is mostly determined by the sector and size of the company. Based on these results, the authors conclude the validity of the complementarity thesis between vocational and academic education.

Chapter 12, "The Increasingly Global Phenomenon of the Expert Teacher Designation – A Critical Realist Perspective and Analysis," is written by Andy Goodwyn. She explores the emergence of expert teacher models using a Critical Realist perspective combined with a phenomenological approach. The question she seeks to answer is: What is the meaning of this global phenomenon, and how significant is it to the future of the teaching profession worldwide? The author analyzes the emergence of these models in different countries, such as England, Australia, Singapore, Korea, and Norway, and the interactions that generate international interest. The analysis focuses on the conceptual, political, and sociological aspects of the expert teacher idea, both as a national and as a global trend, and proposes a classification of levels of expertise according to the teacher's capacity for action. Based on this analysis, a case study is carried out, focusing on two experiences: The National Board for Professional Teaching Standards in the USA and the succession of models developed in the UK (Scotland and England). From these analyses, it is concluded that, although much research is still needed, the establishment of an expert teacher may well have real benefits in raising the status of the teaching profession in systems where teaching is not perceived as a good career.

Finally, "Overcoming Pseudo-Scientific Theories in Education Through Dialogic Pedagogical Training in Latin America," discusses the implementation of learning theories in Latin America. UNESCO statistics indicate a slowdown in educational progress in the region, with high rates of school exclusion and low levels of proficiency in reading and mathematics. To address this situation, Alfonso Rodriguez-Oramas, Esther Roca-Campos, Roseli Rodrigues de Mello, and Javier Diez-Palomar propose the use of Dialogic Pedagogical Training (DPT) as an alternative to other approaches, such as the constructivist conception of meaningful learning. DPT is based on the theory of dialogic learning and consists of building pedagogical training spaces in which teachers and other members of the community have direct access to the most important scientific and theoretical sources in education and can examine them together. The model has been implemented in nearly a thousand schools in eight Latin American countries, achieving appreciable improvements in students' academic performance and social cohesion. Interviews were conducted with teachers in six Latin American countries who participated in an online DPT training program using communicative methodology research. The results show the potential of the model in promoting the adoption of evidence-based educational practices.

The authors conclude that DPT is an effective tool for improving educational outcomes, which makes it preferable to other educational practices that qualify as pseudo-scientific.

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OVERCOMING PSEUDO-SCIENTIFIC THEORIES IN EDUCATION THROUGH DIALOGIC PEDAGOGICAL TRAINING IN LATIN AMERICA

*Alfonso Rodríguez-Oramas, Esther Roca-Campos,
Roseli Rodrigues de Mello and Javier Díez-Palomar*

Introduction

There is an international debate about the importance of grounding all educational actions on scientific evidence (Flecha, 2015; Roca-Campos et al., 2021). According to the contributions that have been contrasted in multiple investigations conducted in different contexts around the world, the data suggest that “teacher professional development” has an important impact both on the quality of teaching and on the professional knowledge that teachers must use to respond effectively to students’ learning difficulties (Darling-Hammond, 2006; Flecha, 2015; Harris & Sass, 2011; Toom et al., 2010). There is consensus among the scientific community that “teaching quality” also has a great impact on student outcomes (Bacher-Hicks et al., 2015; Boyd et al., 2009; Darling-Hammond, 2006), which may be even greater than other variables such as “household socioeconomic status” (Darling-Hammond, 2010; Flecha & Soler, 2013). According to previous research in the field, certain types of teachers’ professional training programs based on scientific evidence contribute to school improvement (Opfer & Pedder, 2011; Wayne et al., 2008). When teachers base their decision-making and practice on scientific evidence, different studies suggest that school results improve greatly (Alton-Lee, 2011; Roca-Campos et al., 2021; Toom et al., 2010).

Previous research also suggests that teachers increasingly demand professional development programs based on scientific evidence rather than assumptions. Many studies have reported a positive impact of this type of programs, such as Dialogic Pedagogical Training (DPT), which has been associated with significant improvement in terms of students’ academic performance and social cohesion (García-Carrión et al., 2017; García-Carrión, López de Aguilera et al.,

2020; Roca-Campos et al., 2021; Rodríguez-Oramas et al., 2022). DPT is based on the theory of dialogic learning (Flecha, 2000) and consists of building pedagogical training spaces in which teachers and other members of the community have direct access to the most important scientific and theoretical sources in education while they can discuss them (Flecha Garcia, Roca Campos & Lopez de Aguileta, 2019). This approach prioritizes teacher training by discussing practices that improve educational results in many different contexts, such as the so-called successful educational actions (SEAs) (Morlà-Folch et al., 2022) identified within the research project INCLUD-ED. Strategies for inclusion and social cohesion in Europe from education (Flecha, 2015). This study was the only EU-funded research project within the Socioeconomic Sciences and Humanities category of the Framework Program selected by the European Commission among the ten examples of most successful stories (European Commission, 2011; Flecha, 2015). The DPT's evidence-based approach helps prevent educational myths and misleading practices from being transferred to schools, protecting students from their negative effects (Flecha, 2015).

Although the scope of this discussion is global, in this chapter, we focus on discussing the impact of scientifically based teacher training in the case of Latin America and the Caribbean countries because, in this study, we start from data collected from an experience of teacher training in which teachers from ten different countries in this continent participated. In fact, in the case of Latin America and the Caribbean countries, nowadays, some teacher training programs continue to promote educational approaches with poor results in terms of student academic performance that are not evidence-based, encouraging teachers to apply practices such as ability grouping (Buttaro & Catsambis, 2019) or learning styles (Rogers & Cheung, 2020) that have been proven to produce negative results in terms of students outcomes. Statistics show that Latin America and the Caribbean have experienced deceleration and stalling of many indicators of their progress toward the UN's Sustainable Development Goal of quality education. Estimates that precede the pandemic establish that some 10.4 million children and young people were excluded from access to primary and secondary education. For those who did have access to it, completion results are still highly unequal: 84% of the students from the highest income quintile completed secondary education, compared to only 44.1% of the lowest income quintiles (UNESCO, 2022, p.7). Similarly, it is estimated that only 31% of all 15-year-olds, inclusive of enrolled students and out-of-school population, have the minimum proficiency levels expected for reading and 21% for mathematics by the end of secondary school, with percentages dropping to 16% and 9%, respectively, for students of the lowest income quintiles (UNESCO, 2022, pp. 8–9). Furthermore, this outlook is expected to worsen in the coming years due to the impact of the COVID-19 pandemic.

In contrast, two decades ago, researchers from the Federal University of São Carlos in Brazil, with support from the Community of Research on Excellence

for All (CREA) from the University of Barcelona, began to carry out DPT in schools that became Learning Communities to improve their educational results (Mello, 2009). Inspired by those first successful experiences, the Instituto Natura in Brazil established a collaboration agreement with CREA and, in 2013, created the Latin American Network of Learning Communities. As a result, in 2022, nearly 1,000 schools in eight countries on the continent participated in DPT implementing SEAs with their students (Instituto Natura, 2023). The schools that have participated in this program (Learning Communities) are managing to dramatically improve the learning results of their students (García-Carrión, López de Aguilera et al., 2020; Rodríguez-Oramas et al., 2021) because they base their educational decisions on scientific evidence (Flecha, 2015) rather than unproven educational pseudo theories based on assumptions for which we do not have scientific proof that they produce any positive result in terms of learning.

Although some literature demonstrates the relationship between DPT and school improvement (e.g., Roca-Campos et al., 2021; Rodríguez-Oramas et al., 2021), it has not yet been studied how DTP contributes to overcoming pseudo-scientific theories and replacing them with scientific evidence. Focusing on the experience of an online DPT program carried out in 2020 in which teachers from ten different countries participated, this chapter aims to analyze the impact of DPT to contribute to overcoming pseudo-scientific theories and practices that are widespread among teacher professional development programs in Latin America, particularly the constructivist conception of meaningful learning, which is one of the most widely used theoretical approaches in Latin American countries to justify education reforms in recent decades, and replacing them with scientific evidence training programs such as the ones based on dialogic learning and SEAs.

Therefore, the chapter is organized as follows: First, a brief discussion of the literature on the criticisms of the constructivist conception of meaningful learning and the theories and practices shown to improve educational results is presented. Second, the case study and the research methodology are presented in detail. Third, we discuss the results obtained, drawing on the participants' voices in the study. Finally, the research results are discussed, considering the previous scientific literature, and the implications for teacher education are outlined.

State-of-the-Art Research on Learning

About the Constructivist Conception of Meaningful Learning

One of the most widespread conceptions of learning in teacher education in Latin American schools is David P. Ausubel's theory of *meaningful verbal learning*. The author describes the central premise of this theory in his book *Educational Psychology: A Cognitive View* where he claims: "If [he] had to reduce all educational psychology to just one principle, [he] would say this: The most important

single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly" (Ausubel, 1978, p. 163). Based on this idea, preservice teachers explain that the key to getting students to learn new things is to identify their learning levels and adapt teaching to connect with their previous knowledge. Drawing on the concept of meaningful learning, one of the main educational features for teachers to consider is that it does not make any sense to teach anything without considering the students' previous knowledge about that subject (Moreira, 2012).

In Brazil, the literature on using the *theory of meaningful learning* as a reference in education dates back to the early 1980s, when it gained momentum in the following three decades (Moreira, 2012). This theory has grown in teacher education in the Spanish-speaking countries of Latin America for at least two decades. A main reason (among others) explaining this trend is the popularity of the constructivist theoretical approach to teaching and learning developed in Spain by a group of people that has Ausubel's meaningful learning as the main theoretical basis for their proposal (Coll et al., 1993; Díaz Barriga & Hernández, 2005). In Spain, the constructivist conception of meaningful learning was the basis that led in 1990 to the approval of the LOGSE (Ley Orgánica General del Sistema Educativo) [General Organic Law of Education] (López de Aguilera & Soler Gallart, 2021). The *meaningful learning* approach became a key axis of in-service and preservice teachers' training programs in Spain (Flecha, 2019). One of the main changes introduced by this law is the so-called "Individualized Curricular Adaptations" addressed to students with various learning difficulties and the "Flexible groups," that is, homogeneous grouping based on educational attainment (García et al., 2010). Those practices ignored the international scientific literature warning that grouping students by level and lowering educational expectations have profound negative effects on the quality and equity of education, disproportionately affecting the most disadvantaged and vulnerable students (Braddock & Slavin, 1992; Flecha, 2015; Hattie, 2009). Empirical results of students' academic performances in Spain confirmed the negative impact of such practices. The Programme for International Student Assessment provided evidence of Spanish students' decreased reading comprehension and mathematics levels throughout the 2000s (OECD, 2000, 2012), after a decade of implementing constructivism as the main approach in teachers' professional development programs.

While the constructivist conception of meaningful learning was gaining strength in Spain and Latin America, Ausubel's theory was criticized for needing more coherence and empirical demonstration. One of the most relevant criticisms was published in the *Harvard Educational Review* two decades ago, in which the author stated that "*the lack of any clear empirical demonstration of their benefit to education must, in the end, lead toward their dissolution.*" (Egan, 2005, p. 40). In his argument, Egan analyzes various fallacies that Ausubel imposes when stating that prior knowledge is the most important factor for learning. First, Egan argues

that if that were a fundamental principle of human learning, there is no way that the process could begin since "*the principle sets one into an infinite regress looking for prior learning.*" According to him, this argument alone should alert us that Ausubel's guiding principle is confusing and wrong. Second, he argues that the idea that learners cannot grasp things unconnected with what they already know is false. Students, he states, always learn new things that are, to some degree, unconnected with what they already know, which shows that novelty is not a problem for human learners. Third, he criticizes how Ausubel's principle has been interpreted in education and curriculum design, specifically when teachers have assumed that children's thinking is simple, concrete, and connected to local experience. However, he claims that children also have imaginations and emotions that, they, too, connect with the world, demonstrating that their minds are not restricted to the everyday details of their social lives. Finally, the author suggests that no one's understanding of the world expands according to the principle of gradual content association. Instead, he argues, learning is a much messier, unpredictable, and wilder process than what Ausubel's principle suggests.

More recently, Lopez de Aguilera and Soler Gallart published an article analyzing how Ausubel's concept of "meaningful learning" imposed and legitimized educational segregation (López de Aguilera & Soler Gallart, 2021). The authors recall that in the context of the actions against educational segregation led by the *civil rights movement* during the 1960s in the United States, which had managed to get black students to attend schools where white students attended, the meaningful learning theory of Ausubel provided a "solution" for the racist sectors that wanted to maintain segregation. Since separating students in differentiated schools was no longer possible, they would now be kept separate within the same school but in differentiated educational spaces (López de Aguilera & Soler Gallart, 2021, p.7). In addition, they explain that although there was no scientific evidence to show that this educational approach had improved results in any school or educational system in the world, in the 1980s, some university professors managed to impose Ausubel's meaningful learning as a mandatory reference in education studies in Spain, ignoring other approaches that had provided a plethora of evidence of their success in improving students' academic performance, such as the ones by Paulo Freire, for instance, that was taught in top-level universities such as Harvard University or the University of Cambridge, but not at any Spanish university at that time. The international scientific community did not recognize those university professors. Still, they did have great power within Spanish universities, so many Spanish university professors began to teach and embrace Ausubel's conception of meaningful learning in the following years and decades (López de Aguilera & Soler Gallart, 2021, p. 8).

Surprisingly, the criticisms of the constructivist conception of meaningful learning in Latin American countries have gone largely unnoticed, with a few exceptions (e.g., Mello, 2012). At present, Ausubel's conception of meaningful

learning, and particularly the idea of the centrality of prior knowledge for learning, is deeply rooted in the beliefs and assumptions about how students learn, as well as in the everyday vocabulary of a large part of the Latin American teachers (e.g., Alves et al., 2021; Matienzo, 2020; Parra Campo & Mejia Narro, 2022; Rocha, 2021). However, while most of the literature consulted on meaningful learning in Latin America claims that this educational conception is beneficial for education, the authors of this text were unable to find evidence published in prestigious scientific journals proving that the constructivist conception of meaningful learning has contributed to improving the results of specific schools or educational systems in the continent.

The Theory and Practice of Dialogic Learning

In recent decades, theories from various disciplines – including evolutionary anthropology, sociology, education, and many others – have experienced a “dialogic turn” that emphasizes the dialogic nature of all social processes (Flecha et al., 2001). Along the same line, educational psychology has undergone a dialogic turn as the focus of analysis has shifted from intramental to inter-mental activity (Racionero & Padrós, 2010). This dialogic turn meant a change from the prior understanding that knowledge and beliefs are structured in mental schemes of thought, which was greatly influenced by the “cognitive revolution” of the 1950s, to the current perspective in which knowledge and thought are developed through dialogue and interaction. Even Bruner, an author deeply involved in the schemata perspective, acknowledged the limitations of that approach and transformed his work to incorporate the key points of culture, interaction, and intersubjectivity (Bruner, 1996). This new field of study that analyzes learning through interaction and dialogue has given rise to diverse studies on situated cognition (Hutchins, 1995), communities of mutual learners (Bruner, 1996), communities of learners (Brown & Campione, 2013), communities of practice (Wenger, 1998), communities of dialogic inquiry (Wells, 2000), and learning communities (Elboj, Puigdemívol et al., 2002), among others.

Framed in this dialogic turn of the learning sciences (Racionero & Padrós, 2010), the theory of dialogic learning (Aubert et al., 2008; Flecha, 2000) is a scientific conception of learning developed by Ramón Flecha, which is based on the most important international contributions of learning sciences that highlight interactions, culture, and dialogue as key factors for learning. Dialogic learning proposes that to achieve maximum learning and greater social inclusion of all, learning environments must promote interactions and dialogue that comply with the following seven principles (Flecha, 2000).

- **Egalitarian dialogue:** Occurs when contributions are considered according to the validity of their reasoning instead of the positions of power held by those who speak.

- Cultural intelligence: Capitalizing on every participant's academic, communicative, and practical knowledge and abilities.
- Transformation: Instead of adapting to the environment, creating dialogic interactions that transform the prior levels of knowledge and the sociocultural context to advance toward the success of all.
- Instrumental dimension: Language and communication are used as tools to construct knowledge and increase learning.
- Creation of meaning: Dialogues become sources of personal and social meaning for the entire group.
- Solidarity: Interactions are based on solidarity when they occur in egalitarian and horizontal relations and when the ultimate motivation is that everyone learns together.
- Equality of differences: Every student, regardless of characteristics or background, has the same opportunity to engage in dialogue, share opinions, be evaluated based on the arguments provided, and have the same chance of achieving successful learning.

From educational psychology, dialogic learning incorporates the contributions of Vygotsky's cultural-historical theory (1978), which established that the origin of higher psychological processes, including learning, is social and that the study of the mind and human behavior should necessarily analyze the cultural context and social interactions. In addition, drawing on other disciplines, such as anthropology, dialogic learning collects contributions that explain the dialogical nature of individuals. Drawing on the work of G.H. Mead, Flecha claims that individuals (participating in a learning process, for instance) are the result of a social process in which they participate with other individuals, negotiating their roles and identities. The subjective identity (the "self") is always the result of the "internalization" of the social image that others have about "me." Studies conducted in the educational field have provided much evidence of the impact of "identity" on students' performance. For instance, Rosenthal (1987, 2002) has coined the concept "Pygmalion effect" to describe the important impact that a particular social identity has on students' learning: when a teacher has high expectations of a specific child, this social "image" that the teacher has of that student leads them to improved performance.

The opposite situation is also true, when the teacher has a low expectation about a child, this image leads the student to perform worse. For this reason, teachers must always maintain high expectations about their students, for instance, as Freire demonstrated with his work in Brazil. Egalitarian dialogue helps to overcome educational failure because drawing on those theoretical roots, it claims that learning results from the egalitarian dialogue in which all students participate on an equal basis, exchanging arguments to justify their answers when working together to solve the tasks proposed by the teacher.

The dialogic learning approach has been implemented since 1978 when the first Learning Community, La Verneda-Sant Martí School for adults (Sánchez Aroca, 1999), was created. Currently, a growing number of schools from all educational levels apply dialogic learning with excellent results in terms of academic performance, improved coexistence, and social inclusion (García-Carrión, Padrós Cuxart et al., 2020). They achieve this by implementing SEAs that are the main result of INCLUD-ED (Flecha, 2015). The SEAs are based on dialogic learning. They allow the reorganization of existing resources in the school and the community to achieve academic improvement for all students, avoiding their separation by learning levels or reducing their educational opportunities (Flecha & Soler, 2013). The SEAs are the following (Morlà-Folch et al., 2022):

- Educational participation of the community: Family involvement in learning activities.
- Interactive groups (IGs). Arranging the classroom into small heterogeneous groups of students with the support of a volunteer in each group.
- Dialogic literary gatherings (DLGs). Sessions where participants share their thoughts and impressions about the best of universal literature.
- Extension of learning time. Extending learning activities (and time) after school with the help of volunteers.
- Dialogic model of prevention and conflict resolution. Opening spaces for dialogue among the different groups of the school community to define the community's coexistence norms that should be complied with by all members.
- Family education. Training sessions for parents and other community members are delivered in the school.
- Dialogic Pedagogical Training. Teacher training is based on relevant theoretical and scientific literature in pedagogy, education, and psychology, among other education-related disciplines (teaching and learning).

Extensive scientific literature documents the social impact of SEAs in schools of all educational levels, including special education schools. For instance, SEAs improve instrumental learning, self-esteem, and motivation in all subjects. SEAs also improve interpersonal relationships and social cohesion and reduce violent conflicts. In addition, SEAs also achieve greater involvement of families in the school (Morlà-Folch et al., 2022). Previous studies on the impact of the implementation of SEAs in Spanish schools have reported that a decrease in school dropout has been observed in the transition from primary to secondary school, as well as students' improvement in academic performance. There is also evidence of an increase in completion rates in secondary education (García-Carrión et al., 2018). That progress has also been observed in Latin American schools. For example, two studies in Colombia (Soler et al., 2020) and Mexico (Rodríguez-Oramas et al., 2022) documented that low socioeconomic

level elementary schools that implement SEAs had outperformed similar school averages on national achievement tests, also improving coexistence between peers, as well as improving the relationship of the school with students' families.

The starting point for most schools that implement SEAs is the participation of teachers and/or other stakeholders in DPT programs. For example, through an intensive 30-hour training program titled "Raising Awareness," teachers receive training based on international scientific evidence on educational actions that have demonstrated being successful in improving students' academic performance and improving their behavior and social cohesion at the school (García-Carrión et al., 2017). DPT is a training program based on the best scientific evidence available, operating under the principles of dialogic learning and incorporating the voices of the different actors involved in the school (García-Carrión et al., 2017). During the DPT, the scientific evidence that dismantles various educational myths is also discussed, such as the idea that academic success depends on the educational level of families (Flecha & Soler, 2013) or that the key to fostering learning is knowing the student's prior knowledge about a particular subject (Egan, 2005). This approach contributes to transferring the most successful theories and practices worldwide and avoids incorporating numerous educational myths and misleading practices in schools (Flecha et al., 2019). Based on the "Raising Awareness" program, other DPT programs have been developed in Latin America. For instance, in Mexico, in 2018, several training programs were carried out aimed at teachers, principals, school supervisors, and technical-pedagogical advisors from early childhood to secondary education to train them on SEAs, which combined intensive initial training with dialogic pedagogical gatherings (Rodríguez-Oramas et al., 2021).

Methods

An Online DPT Program as an Object of Study

After learning about the success of the first Learning Communities in Brazil (Mello, 2009), in 2013, the *Instituto Natura*, an organization created by the Brazilian company *Natura* to promote educational projects, established a collaboration agreement with CREA to transfer the SEAs to schools in the continent. To do this, Instituto Natura created the *Latin American Network of Learning Communities*, which brings together various educational organizations from seven countries committed to transferring the SEAs to schools they work with. In 2022, nearly 1,000 schools in eight Latin American countries participated in DPT and implemented SEAs with their students (Instituto Natura, 2023).

One of the main actions carried out by the organizations that created the network is to offer various DPT programs open to schools and other educational role players to fulfill their objective of promoting SEAs. For example, in 2020, during the first months of the COVID-19 pandemic, they created an online DPT

program aimed at teachers, school administrators, educational authorities, and other educational actors interested in transferring SEAs to their schools. The program consisted of ten weekly two-hour sessions in which a CREA researcher specialized in Learning Communities explained the theory of dialogical learning and the scientific basis of SEAs, introducing examples of schools that implement them successfully. During those sessions, evidence was also presented that refuted various educational myths widespread in Latin American educational systems, including the idea that the constructivist conception of meaningful learning contributes to improving education. The researcher's session was complemented by dialogic pedagogical gatherings in which participants discussed scientific articles read in advance, allowing them to deepen their understanding of each topic. The first group of 35 people participated in the program between April and June 2020, and due to the success of this experience, it was decided to open a second group in which another 60 people participated between July and September 2020. The participants' countries of residence were Argentina, Brazil, Colombia, Costa Rica, Ecuador, Italy, Mexico, Nicaragua, Paraguay, and Peru.

Research Objectives and Methodology

Considering the diversity of the people who participated in the online DPT program, two main objectives were established for this research. The first was to explore whether Ausubel's theory of meaningful learning was a central element in the pedagogical training of the participants of the study and whether the constructivist conception of meaningful learning influenced their teaching practices. The second was to know if a DPT program like the one described above can contribute to replacing pseudo-scientific educational theories and practices with scientific evidence and SEAs. Therefore, the following research questions were established:

- 1 Are the teaching practices of the people interviewed influenced by the constructivist conception of meaningful learning?
- 2 Did the online DPT program contribute to replacing practices that are based on the constructivist conception of meaningful learning with evidence-based practices such as SEAs?

It was decided that a study following the communicative methodology (CM) would be designed to answer the research questions. This methodology is characterized by the intersubjective dialogue that researchers establish with the people investigated throughout the research process, seeking a joint interpretation of reality (Gómez et al., 2019). During the research process, researchers bring their scientific knowledge to the dialogue. At the same time, the participants contribute with their daily life knowledge and experience, which allows the emergence of a link between the research contributions and their impact on society. In addition,

in the CM, the information analysis aims to identify elements that reproduce or increase social inequalities (exclusionary dimension) and those that make it possible to reduce and overcome inequalities (transformative dimension). Thanks to this, CM has widely demonstrated its ability to generate social impact and contribute to overcoming social inequalities (Redondo-Sama et al., 2020), which makes it particularly convenient for the present investigation.

Data Collection and Analysis

For the purposes of this research, semi-structured interviews with a communicative approach were conducted with participants from the DPT program. The criterion used to choose the people interviewed was to seek the maximum diversity of profiles possible, considering countries of origin and type of school involvement. In addition, priority was given to interviewing people who had attended the ten sessions of the program and had participated in the dialogical pedagogical gatherings, which implies that they had read all the training materials. Out of the 95 program participants, 15 people who met the selection criteria to participate in the research were invited first. Although all agreed to participate, only nine interviews were completed, which are the ones presented in this investigation. Table 13.1 lists the profiles of the people who participated in the research and a pseudonym to preserve anonymity. Of the nine participants, all reported having university training in pedagogy or education, except for one participant (Patricia), who reported having completed university studies in another area of knowledge and having completed pedagogical qualification courses.

The interviews followed a semi-structured conversation protocol based on the themes that emerged from the reviewed literature, which are presented in detail based on the context of the most recent findings. The open dialogues allowed the interviewees to expand on the topics they wanted within the research objectives. Some of the guiding questions that were used in the semi-structured interviews are the following (questions related to the demographic profile of the participants are excluded):

- In your pedagogical training, were you taught the constructivist conception of meaningful learning that is based on the contributions of David Ausubel? If so, what were you taught about it, and how central was it to your pedagogical training?
- Were you presented with scientific evidence that students improved their educational results by applying ideas based on that conception of learning?
- Is your current teaching practice based in some way on the constructivist conception of meaningful learning?
- How do you value the scientific evidence you learned during the online DPT program? Does it contrast or resemble what you had learned in your pedagogical training?

TABLE 13.1 Profile of the Interviewees

Country	Profile	Pseudonym
Argentina	Pedagogical advisor of primary schools	Karina
	Teacher of education in a teacher training institute	Ruth
Chile	Principal in a primary school	Fernando
Costa Rica	English teacher in a primary school	Tamara
Mexico	Pedagogical advisor of primary schools	Martha
	Pedagogical coordinator of preschool, primary and secondary schools	Linda
Nicaragua	Pedagogical coordinator of preschool, primary and secondary schools; and professor of education, responsible for master's degree in education	Nancy
	Principal of a primary school	Clara
Paraguay	Pedagogical coordinator, basic education	Patricia

- After participating in the DTP online program, have you changed your teaching practices in some way? Have you started implementing any of the SEA you learned about during the DPT program?

The interviews were conducted by video call between August 18 and 27, 2021. The average duration of the interviews was 39 minutes, and all were transcribed verbatim. The information was first screened to identify possible emerging issues that had yet to be considered in the original research design for analysis in the interviews. Subsequently, an analysis chart was created that differentiates between transformative and exclusionary dimensions of two analysis categories derived from the literature review and the research objectives (see Table 13.2). Once the researchers agreed upon the analysis chart, the transcripts of the interviews were analyzed, and different excerpts from the interviews were classified depending on whether they corresponded to exclusionary or transformative dimensions of the categories of analysis.

As a last step, the research team analyzed the main findings independently and then contrasted them until reaching a consensus. The final results of the research, presented in the following section, were organized following the structure of the analysis table to answer the research questions.

Results

Findings Related to Research Question 1

Teacher Training That is Neither Based on Nor Presents Scientific Evidence

The first aspect that stands out in the information analysis is that Ausubel's theory of meaningful learning was present in the pedagogical background of all the

TABLE 13.2 Analysis Chart

<i>Categories of Analysis</i>	<i>Exclusionary Dimension</i>	<i>Transformative Dimension</i>
Scientific basis of teacher training	1	3
Ways of grouping students and practices that are transferred to the classroom	2	4

Source: Compiled by authors.

participants. In most cases, the interviewees affirm that this theory was taught to them as one of the most important theoretical references during their initial pedagogical training, presenting it as the key to understanding how people learn and insisting that prior knowledge must be considered before planning a class.

The meaningful learning theory was like daily bread during my initial pedagogical training. We were never told why, but we were always told that it was the best theory of learning, that we should base our educational practice on it, etc. ... We were told that the previous knowledge was the starting point. According to their previous knowledge, we had to imagine how far children could reach. It was as if we wanted to ration their learning as if we could guess how far they could go.

(Martha, Mexico)

At the university, I was taught different pedagogical theories, among them constructivism and, specifically, the meaningful learning theory. ... We were taught everything: The theory, the methodology, how to implement it in the classroom, and everything related. At that time, most universities and schools were working with that theory. ... We were told we had to connect the new knowledge with their previous knowledge every time.

(Clara, Nicaragua)

In the university, I studied education (to teach future teachers) ... The meaningful learning theory was the center of all my training. *I remember the author (Ausubel), they would talk about him all the time.* Our work in the schools had to be based on meaningful learning. That meant focusing mainly on the previous knowledge, and based on that previous knowledge, people are supposed to build new knowledge.

(Ruth, Argentina)

During my training at the university, when I had a subject called theories of learning, we were taught Ausubel ... Almost all of us who were studying

at that university received this class, everyone received it, because it was a mandatory class ... At that time, what we were told was that the most important factor in learning is what the student already knows, that is, that we have to start from what the student knows ... I had it for breakfast, lunch and dinner always, this meaningful learning theory thing.

(Tamara, Costa Rica)

When I studied at the university, this theory was a complete novelty. At that time, meaningful learning and previous knowledge had to be part of your class planning.

(Karina, Argentina)

The two exceptions were Linda, who claimed to have been introduced to constructivism and meaningful learning theory during her university education but was not emphatic in highlighting it as particularly relevant, and Fernando, who said he was familiar with Ausubel's theory in his initial pedagogical training, but he also did not explicitly identify it as one of the most important references.

Neither Nancy nor Patricia had university studies in pedagogy or education. In Nancy's case, she originally studied engineering. She was a primary and secondary school teacher for ten years, which motivated her to study for a master's degree in education and learning. Regarding her experience as a classroom teacher, she explained that the in-service teacher training she received was used to promote the adaptation of teaching planning to their students' prior knowledge based on the constructivist conception of meaningful learning. Nancy commented: "In the training they gave us, the topic of prior knowledge was always in the background, as if it were fixed, like something that was part of the culture" (Nancy, Nicaragua).

Later, in her master's studies, Nancy became acquainted with Ausubel's theory in depth because it was presented as a great innovation in educational psychology, mainly through the publications of the constructivist conception of meaningful learning that was becoming popular in those years in Latin America due to the works of authors from Spain and Mexico.

Patricia explained that during the pedagogical qualification courses she participated in, the theory of meaningful learning was the focus of her pedagogical training: "When they talked about meaningful learning, they said: [you must] find out what the student already knows or what he can achieve. Somehow it predisposed us as teachers to diagnose" (Patricia).

Researcher: "Would you consider that this theory of meaningful learning was the main theory of your teacher training?" "Yes" (Patricia, Paraguay).

When the researcher asked if they had been presented with evidence of a school or educational system that had improved by applying the constructivist conception of meaningful learning, none of the interviewees could refer to any evidence. In fact, seven of them said that they had never been shown any

evidence of it. In line with what was observed in Spain by López de Aguilera and Soler (2021), the teacher training programs in which the interviewees participated contributed to disseminating and perpetuating the constructivist conception of meaningful learning despite not presenting any scientific evidence to support it.

Educational Practice Influenced by the Constructivist Conception of Meaningful Learning

The second aspect that stands out from the analysis is that most interviewees identify that the constructivist conception of meaningful learning did influence their teaching practice, particularly by implanting the idea that teachers should start from a diagnosis of prior knowledge to plan their classes. In the case of Clara and Nancy, they explain that the pedagogical guidelines that schools and teachers received in their country were to plan the class based on their students' prior knowledge.

Most universities and schools were working with that approach [meaningful learning]. So, they began to work on how we could incorporate it into the lesson plans, what to do with prior knowledge, strategies for that, and so on. So, it was like the boom of working in this conception.

(Clara, Nicaragua)

Karina, Martha, and Patricia mentioned that it was explained to them that they had to adapt class tasks according to learning levels based on the constructivist conception of meaningful learning, providing lower-level activities for students with more difficulties. In a similar way to the "Flexible Groups" of the *Spanish LOGSE*, the differentiation of activities by learning levels was presented to them as a leveling measure that would have positive effects on student learning, opposite to the scientific evidence warning that homogeneous groupings are negative (exclusionary) to the most disadvantaged students (Flecha, 2015; Hattie, 2009).

To level them up [our students], we were told to identify the children with less knowledge and change the activities' complexity level. For instance, the kid that knew a little less would have a different activity than the most advanced children.

(Martha, Mexico)

According to the theory, all teaching plans must have differentiated tasks for a child falling behind and different ones for the rest [of the students].

(Karina, Argentina)

We used to make a diagnosis, and based on that, we would define the "Meaningful Learning" for each student according to their diagnosis, and well ... the

students would be given differentiated tasks. One group would do one task, and another would do another. And the same for evaluations.

(Patricia, Paraguay)

Similarly, Tamara explains that the theory of meaningful learning is still used today to justify curricular adaptations for students with learning difficulties. Those adaptations imply taking students out of their reference group to give them a differentiated curriculum to level the playing field for them. Once again, this practice, which coincides with the "Individualized Curricular Adaptations" of the LOGSE, is opposite to the research findings alerting that this type of action worsens learning results and increases social exclusion (Braddock & Slavin, 1992; Flecha, 2015).

This theory of meaningful learning is very present in classrooms. For example, ... when there are curricular adaptations, the recommendation as such from the Ministry is that we remove the children from the class. Get them out because we must reinforce, because we must give the content separately. So, obviously, you must separate them from the rest of the group. And that is everywhere in Costa Rica; the same thing is done.

(Tamara, Costa Rica)

Findings Related to Research Question 2

Teacher Training Based on Scientific Evidence in Education

The DPT program in which the interviewees participated consisted of presenting in detail the scientific evidence described in the introduction and current context of this report. This presentation first discussed some educational myths and pseudo-scientific theories that are widespread in Latin American educational systems, including the constructivist conception of meaningful learning. During the training sessions' discussion, several participants expressed that they had yet to hear the criticism of that theory or the practices derived from it. Several participants were shocked by the evidence presented since meaningful learning was presented as one of their teaching practice's most important theoretical bases. For example, Patricia explained that thanks to the DPT, she became aware that when teachers plan their classes around students' prior knowledge, they limit their chances of learning since the teacher decides how much a student can learn.

It was shocking to learn that we, the teachers, were setting a ceiling for the students, thinking that not everyone could reach the highest levels of development and thought. And that by doing that, we were limiting our students! I feel that it had a huge negative impact on our initial teacher training. ...

In some way, what we did, or still do, is that we teachers set the ceiling for the learning of our students based on a diagnostic test.

(Patricia, Paraguay)

During the training sessions, one of the topics that generated the most critical discussion was the evidence that demonstrates the negative effects of homogeneous groupings, such as those promoted by the Spanish LOGSE based on the constructivist conception of meaningful learning. Although not all teachers who participated in the DPT made individualized curricular adaptations or grouped students by level, most were unaware of the scientific evidence about the negative effect of these educational practices on students' learning and development, especially on the most vulnerable students. For example, Ruth recalled that her brother, who has intellectual disabilities, was segregated in high school; this practice profoundly affected his academic performance and caused him to drop out. In the interview, she said that her brother's experience was consistent with the scientific evidence discussed in the DPT and that she was unaware of it before participating in the training program.

When we discussed the negative impact of homogeneous grouping, I remember that I thought that it was true that it is pernicious for the students. My brother has an intellectual disability and was segregated from his classmates in secondary education. He ended up failing all subjects and leaving the school. He didn't like it at all.

(Ruth, Argentina)

However, the DPT program did not focus solely on unveiling educational myths and pseudo-scientific theories. The priority of the training program was to present the scientific basis of dialogic learning and the SEAs, which have contributed to improving the academic results of numerous schools in many countries. Among the various pieces of evidence presented in this regard, research was discussed on schools that function as learning communities in vulnerable contexts in Spain and Latin America and that have managed to improve their results by implementing SEAs. Patricia explained that after learning of the case of a Mexican Learning Community (Rodríguez-Oramas et al., 2022) whose results had improved remarkably despite the low socioeconomic level of the community, she transformed her expectations of the potential learning of the students that she worked with, who also came from vulnerable backgrounds.

I was greatly shocked when I saw the evidence of schools in vulnerable contexts with specific evaluations showing that their learning results improved in 3 or 4 years thanks to the SEAs. We used to think that vulnerable children would only reach a certain level due to their context. As an educator working

with schools in vulnerable contexts, it gives me hope that things can be better and that they can learn and perform equally well as non-vulnerable children.
(Patricia, Paraguay)

During the dialogue with the interviewees, it stood out that the participants felt that the DPT program was very useful for their own teaching practice, mainly because scientific evidence was presented on specific schools that had improved thanks to the implementation of SEAs, unlike other teacher training programs that were not evidence-based. In many cases, this was the reason that motivated them to share the content of the training sessions with their co-workers, as Tamara explained during the interview. In fact, the second group of DPT (with 60 participants) was opened due to demand that arose from people who heard about the program from co-workers who participated in the first group (with 35 participants).

When you attend this training [on Dialogic Learning and SEA], you can share all this evidence and motivate others because we are walking towards something certain. When [we] were shown the statistics of schools that have become Learning Communities, where families and the community are involved, I was very interested, and I talked to my colleagues about it.
(Tamara, Costa Rica)

Substitution of Homogeneous Groupings with Dialogic Learning and SEAs

Of the nine people interviewed, in one case, it was identified that participation in the DPT was directly derived from substituting practices based on the constructivist conception of meaningful learning by dialogic learning and SEA. Clara explains in the interview that her school used to segregate the students with the lowest academic performance in special classes to give them curricular adaptations. Extra-age classes were also held, where students with lower academic performance were placed in classes with younger students. After she and other teachers participated in the DPT, the school stopped conducting educational segregation and started implementing SEAs like IGs and DLGs so that no student was left behind.

The school used to have a program in which lower-performing students were segregated into special classes to teach them apart from the other students. Clara commented:

We said: let's remove this because it is almost like making failure official. We removed those special groups, began to make a different intervention, introduced SEAs, and removed the extra-age classes. We no longer have extra age.
(Clara, Nicaragua)

Additionally, Tamara mentioned that she was beginning to transfer SEAs to her school. Specifically, she explained that at that time, she and another teacher from the school began to implement DLGs in the fifth-grade group in the English class.

We already started to implement it [the DLG] with fifth grade. Last week, in English. The teacher in charge of the fifth-grade group came here to the library, they chose the book to read, and they had a debate.

(Tamara, Costa Rica)

Three interviewees explained that they had already participated in DPT in the past, so it was not the first time they had heard about *dialogic learning* and SEAs. Specifically, Linda, Nancy, and Patricia explained that years before, CREA researchers had taught their schools the 30-hour "Raising Awareness" teacher training program. In the case of Nancy, she was the director of a rural school when they attended the course. In 2015, they decided to become a *Learning Community* and implement SEAs with their students. Due to the improvements that her school experienced in learning, coexistence, and social inclusion, she was one of the main promoters of the DPT, motivating colleagues from six countries to join the first and second groups of the training program.

In the case of Linda, she explained that some years earlier, after the schools she coordinates attended the DPT, they decided to stop doing ability grouping and special classes for students with low academic performance. Instead, they kept students inside their classroom whenever possible and encouraged them to catch up by interacting with their more capable peers. Linda commented during the interview that participating in this new online DPT allowed her to resume her work with *Dialogic learning* in the schools she coordinates.

In our schools, we now try to avoid grouping our students by their levels of performance based on diagnostic tests as much as possible, like we used to do in English class. ... Also, we no longer segregate lower-performing students away in special classes; instead, we keep them in the classroom, and with the help of their classmates, they catch up. We try as much as possible to avoid doing that. ... [Participating in this DPT] has had consequences because we have resumed this work in our schools.

(Linda, Mexico)

Discussion

The present study aimed to analyze the potential of DPT to overcome pseudo-scientific theories like the constructivist conception of meaningful learning, which has become dominant in teacher training programs in Latin America in the past decades. As the analysis of the interviews shows, this theory was

a fundamental part of the pedagogical training of the teachers who participated in this research, who come from six different countries. Although it cannot be affirmed that all the teachers in those countries are trained in the constructivist conception of meaningful learning, it does seem evident that this theory achieved great popularity in Latin American universities and that meaningful learning is still present in classroom practices and the everyday vocabulary of teachers. However, in line with the findings of López de Aguilera and Soler (2021), the results of this research suggest that in Latin America, as in Spain, teacher training programs do not present scientific evidence that Ausubel's meaningful learning improves education, something that would be reason enough to avoid disseminating a theory in disciplines such as medicine. In addition, the analysis of the information collected shows that, with the justification of the centrality of prior knowledge for learning, some practices of homogeneous grouping similar to those promoted by the Spanish LOGSE, such as individualized curricular adaptations or grouping students by learning levels, have been disseminated in teacher training. For decades, the international scientific community has warned that these educational practices do not improve education and disproportionately affect the most vulnerable groups (Braddock & Slavin, 1992; Flecha, 2015; Hattie, 2009). Therefore, their perpetuation in teacher training only worsens Latin American countries' educational results.

In contrast, today, some educational theories and practices contribute to improving school results according to scientific evidence. Such is the case of the theory of dialogic learning and SEAs, which have been applied in Latin America for two decades in many schools. Previous research has shown that when pedagogical training is based on dialogic learning and prioritizes that type of scientific evidence, school results improve (Roca-Campos et al., 2021). However, it had not been studied explicitly whether a DPT program could contribute to overcoming the constructivist conception of meaningful learning that is so widespread in Latin America. The results of this research show that the DPT program analyzed contributed to making teachers aware of the lack of scientific basis for this conception of learning, as well as the negative effects on learning and development of the practices that have been disseminated with it. It is worth mentioning the international context that existed in August 2021, when the interviews took place, may have contributed to fewer people reporting progress in the transfer of dialogic learning and SEA to their schools. At the time, the COVID-19 pandemic was at one of its peaks, with the Delta variant beginning to affect every country worldwide. On that date, most Latin American countries kept their schools closed, with Nicaragua being the only exception by keeping its schools open (UNICEF, 2022). Therefore, it is remarkable that evidence was found that some teachers who participated in the DPT had begun to eradicate practices based on the constructivist conception of meaningful learning and replace them with dialogic learning and SEAs.

It is important to recognize that the present study analyzes a single DPT experience, and its findings cannot be generalized to all Latin American educational systems. More research is necessary to replicate this type of study in other countries and regions of the world to know if these results are generalizable to different social and cultural contexts. However, the results of this research are informative about how DPT can contribute to improving school results in the continent, on the one hand, by preventing the advance of pseudo-scientific theories and practices that affect students so much, and on the other, by promoting the transfer to schools of the best scientific evidence of the social impact that exists in the world today.

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