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Latest research trends on the social dimension of education and training

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General overview: important themes and issues on the social dimension of education and training

This document presents the most prominent topics in education research globally (with a higher representation of Europe and the US) in the last half a year (July 2023 – December 2023) and provides a summary of important themes and issues to inspire future European Commission work in the social dimension of education and training. This summary highlights specific focus areas that are covered by recently published research articles and may be relevant to the European Commission's programme 2023/2024¹ and the Directorate General for Education, Youth, Sport, And Culture (DG EAC) Strategic Plan² 2020-2024, and European Education Area³ focus topics. The reviewed scientific journals are presented in the table below.

¹ European Commission Work Programme 2023 and 2024 Accessible at: https://commission.europa.eu/strategy-documents/commission-work-programme_en.

² Strategic Plan 2020-2024 Directorate General for Education, Youth, Sport, And Culture Accessible at: https://ec.europa.eu/info/system/files/eac_sp_2020_2024_en.pdf

³ More info at: <https://education.ec.europa.eu/>

Table 1. Reviewed scientific journals and other publication outlets

Publication outlet	Issues in the period	Publication count
European Journal of Education	2	18
Educational Research Review	2	14
Education and Training	6	14
Publications Office of the European Union	n/a	10
International Journal of Educational Research	3	9
Review of Educational Research	3	8
Educational Evaluation and Policy Analysis	2	8
Journal of Education Policy	3	5
OECD Education Spotlights	2	3
PISA in Focus	1	2
Assessment & Evaluation in Higher Education	3	2
Teaching in focus	1	1
World Bank Group	n/a	1
Professional Development in Education	2	1
Computers & Education	5	1
Contemporary Educational Psychology	1	1
Early Child Development and Care	1	1
Education and training monitor 2023	n/a	1
Teaching in Higher Education	1	2
Research in Higher Education	4	1
Journal of Women and Minorities in Science and Engineering	1	1
Journal of Family and Economic Issues	2	1
Higher Education	4	1
Total		106

From the analysis of the most prominent journals focusing on the social dimension of education and some key recent studies, **six broad themes relevant to the priorities of the European Commission and the broader context of the social dimension of education and training** could be observed. These topics include:

1. Learning during times of disruption
2. Digitalisation and artificial intelligence in education
3. Diversity, inclusion and equity
4. The role of teachers in the social dimension of education
5. Development of social skills in education
6. Parental and community engagement

Some general trends indicate a prevalence of studies focusing on school education, followed by Higher Education and Vocational Training, although several also address the Non-formal education sector. In addition, trends indicate the use of both qualitative and

quantitative methods, as well as some mixed methods approaches. A variety of studies use systematic reviews, thematic reviews, case studies and meta-analyses, while others propose statistical analysis, impact evaluations, natural language processing and experiments, among other techniques.

In terms of key themes, the most recurrent are innovation and equity in education, education and training of the workforce, access to quality education for all and content of education and training curricula, development of key competences. Considering the EEA priority themes, the most often addressed is *Improving quality and equity in education and training*, and in relation to the DG EAC strategic plan, the most common topics are: *Promoting our European way of life*, followed by an *Economy that works for people* and *A third Europe fit for the digital age*.

The next part of the report is structured according to the six broad themes listed above. The selected scientific articles and key publications are then discussed to give a broader understanding of each theme.

1.1 Learning during times of disruption

The past few years have witnessed significant disruptions in global education systems, primarily due to the COVID-19 pandemic and geopolitical crises, such as the Russian war of aggression towards Ukraine. These crises have posed substantial challenges to education, prompting widespread academic interest and analysis. In this context, the 2022 PISA results (OECD 2023) emerge as a pivotal study as it is the first large-scale assessment to gather data on student performance, well-being, and equity both before and after the unprecedented disruptions caused by COVID-19.

PISA results showed that despite challenging circumstances, 31 countries and economies, including Australia, Japan, Korea, Singapore and Switzerland, succeeded in maintaining or improving their mathematics performance. **Key factors contributing to this resilience were shorter school closures, fewer barriers to remote learning, and continuous support from teachers and parents.** In contrast, less than half of the participating education systems could maintain their previous performance levels, with an average decline of nearly 15 score points in mathematics across OECD countries. The report highlights the importance of various policies and practices, such as prolonged school openings, enhanced parental support, and favourable school climates for student learning and well-being, in building resilient education systems (OECD 2023).

In a preceding meta-analysis by the JRC (European Commission. Joint Research Centre. 2023), the impact of COVID-19 on student performance was extensively examined. This study, encompassing 55 studies across 21 countries, already revealed a notable learning loss attributed to the pandemic. Interestingly, the analysis reveals that learning losses were comparatively smaller in OECD EU countries than in their non-EU counterparts. This difference is attributed, in part, to shorter periods of physical school closure in OECD EU countries. Moreover, the study uncovers a concerning trend: **students appear to have fallen increasingly behind in their learning during the later stages of the pandemic.** These findings emphasise the necessity for continuous educational support and adaptability in the face of prolonged disruptions.

The evolving landscape of education in the wake of COVID-19 pandemic is further explored in a recent article shifting the focus to the effect of the pandemic on non-formal adult education. Focused on the Czech Republic, this research (Kalenda, Kočvarová, and Boeren 2023), based on a national representative survey conducted between the pandemic's first and second waves, aimed to assess the pandemic's impact on participation in non-formal adult education. The study found a significant decrease in overall participation during this

period, dropping to its lowest recorded level. Additionally, it highlighted an increase in inequality based on educational attainment and perceived barriers to participation, suggesting that the pandemic has exacerbated existing disparities in access to non-formal adult education.

Shifting from the global disruptions caused by the Covid-19 pandemic, recent academic research has focused on the specific challenges and transformations in education systems during times of geopolitical crisis, particularly in Ukraine. This body of work offers a comprehensive view of how education institutions adapt and evolve in response to extraordinary circumstances.

A study (Orzhel et al. 2023) examines the resilience and adaptability of displaced universities in Ukraine amidst the war. It identifies the civic university model, with its focus on community engagement and societal service, as particularly effective for universities operating under the strain of displacement and conflict. Complementing this, Lugovyi et al. (2023) provide an overarching view of the Higher Education landscape in Ukraine during the war. They outline the **extensive impact of the conflict on institutional infrastructure, admissions processes, and quality assurance, underscoring the critical role of universities in the nation's recovery process.**

Elkin et al. (2023) delve into the role of civil society organisations in transforming teacher professional development in wartime Ukraine. Their research emphasises the importance of social and emotional learning programs, highlighting how these initiatives support teachers in developing crucial competencies for both personal well-being and student engagement.

Finally, a study by Herbst and Sitek (2023) explores the integration of Ukrainian refugee students into the Polish education system. Their findings reveal significant insights into the geographical distribution and local resources crucial for accommodating the educational needs of refugee students. This study not only addresses the immediate challenges posed by the influx of refugees but also considers the long-term implications for both Polish and Ukrainian education systems. In this respect, a noteworthy study (Sordé-Martí et al. 2023) reviewed the methodological framework implemented by the H2020 REFUGE-ED (2021–2023), which was conducted in collaboration with migrant, refugee, and asylum-seeking communities. They found great potential in the use of strategies that involve end-users in intervention research to create a Dialogic Co-Creation Process (RDCP). This can be applied, for instance, in educational settings to ensure better practice and provision of mental health and psychosocial support.

1.2 Digitalisation and artificial intelligence in the educational field

The resilience shown in these varied educational contexts paves the way for understanding another significant shift in the education sector: **the acceleration of digitalisation.** Indeed, the recent surge in the digitalisation of education can be primarily attributed to those same emergency situations. These events have acted as catalysts, propelling digital content to the forefront of the educational landscape. The study on *Digital Education content in the EU* (Day et al. 2023) underscores this shift, highlighting the rapid transition from traditional classroom settings to online platforms.

The academic community has extensively examined the implications of this shift. Central to their inquiry is the quality and impact of digital educational content. A critical area of focus was put on the 'instructor presence effect' in instructional videos, as it plays a central role in both formal and informal learning. This instructor's presence was shown to increase social presence as well as motivation, but it didn't improve learning outcomes. However, the relationship between this effect and actual learning outcomes is complex and varied,

as evidenced by the research outcomes. A meta-analysis which includes 35 studies and 6339 participants (Beege et al. 2023) showed that while integrating visual instructors into the videos can help reduce the detrimental effect of reduced social processes and has a positive effect on retention, it cannot be considered a panacea. An experiment was conducted on 112 participants (Sondermann and Merkt 2023a) with results faring worse on learning outcomes for videos with talking heads notably because it attracts a lot of visual attention from the learners (Sondermann and Merkt 2023b). However, the participants indicated higher satisfaction and were more likely to prefer those videos compared to presentations where the instructor was not visible. **This observation has multiple implications for the design of educational videos, with the most notable being the balancing act between a video's appeal to its audience and its actual educational utility.**

Delving further into the nuances of digital education, recent studies have also shed light on the broader challenges and adaptations required in the face of globe crises. For instance, a study focusing on Ukraine during the COVID-19 pandemic and subsequent wartime conditions (Ovcharuk, Ivaniuk, and Leshchenko 2023) revealed significant difficulties in implementing effective online education. The study highlighted issues like inadequate access to ICT tools, unstable internet connectivity, and a general deficiency in digital competence among educators. This situation necessitated an **urgent emphasis on enhancing teachers' digital skills and adapting the educational infrastructure to meet the demands of remote learning.**

Moreover, the war's impact on Ukrainian universities (Morze et al. 2023) brought forth a unique set of challenges and innovations. **Many institutions were forced to relocate or rebuild, increasingly turning to digital solutions for continuity.** This scenario led to the conceptualisation and development of comprehensive electronic student campuses. These platforms aim to provide not only educational content but also incorporate advanced pedagogical technologies for skill development in various domains. The study (Morze et al. 2023) examined digital education ecosystem models in universities across Ukraine, Poland, and Slovakia, highlighting the strengths and weaknesses of these systems. It also underscored the importance of establishing key performance indicators for assessing and implementing effective digital education ecosystems.

The role of digitalisation on teacher's work is another aspect that has been the focus of the academic field. The 2023 monitoring report (Mouratoglou, Pateraki, and Scimeca 2023) shows that the 'eTwinning for future teachers' initiative significantly enhances initial teacher education. **It facilitates international collaboration and digital competency development among student teachers and educators.**

Building on the theme of digitalisation in education and its impact on the teacher's profession, another significant study (Demszky et al. 2023) introduces 'M-Powering Teachers', an innovative automated tool designed to enhance teaching practices. Developed using natural language processing, this tool provides teachers with individualised feedback, particularly on their engagement with student contributions - a key aspect of effective dialogic teaching. In a randomised controlled trial involving 1136 online computer instructors, 'M-Powering Teachers' demonstrated a 13% improvement in instructor's update of student contributions. The study also suggests that this tool may increase student satisfaction and assignment completion rates. These findings underscore **the potential of digitalisation in augmenting teachers' professional development and enhancing the overall quality of instruction in digital education settings.**

Finally, advancement in AI has brought about significant pedagogical changes, with chatbots increasingly integrated into daily life, and education doesn't make an exception. A comprehensive scoping review of chatbots in Higher Education (Pereira et al. 2023) based

on 66 studies emphasised the importance of user-centric design for effective chatbot integration. The study highlights chatbots' role in facilitating interactive and personalised learning experiences, thereby enhancing student engagement and participation. However, despite their benefits, **challenges remain, particularly in ensuring natural and intuitive communication that aligns with students' social and linguistic nuances.** The review also points to the necessity of addressing ethical considerations in using AI technologies to uphold the social and ethical standards of the educational community.

1.3 Diversity, inclusion and equity

Studies on inclusion, diversity and equity hold significant importance when approaching the social dimension of education and training. These studies identify the multiple disparities, inequalities and obstacles that are deep-rooted within educational systems, and evaluate their impact on student outcomes and well-being. In doing so, they generate evidence, inform practices and in some cases trigger policy action that foster equal opportunities for all students, regardless of their backgrounds, identities or social circumstances.

These subjects have been extensively examined by various journals and articles, delving into numerous dimensions of social inequality. Aligned with the goals set by the European Commission's work in education, these studies concentrate on **examining how socio-economic status, race, ethnicity, gender, language, and other factors influence educational outcomes and experiences across different education levels.** Moreover, they emphasise the significance of policy instruments in tackling these inequalities, as well as addressing existing biases and discrimination in education based on these conditions and the intersections between them.

Within school environments, diverse factors contribute to educational inequalities. Researchers emphasise especially on the intersection of gender, race, and socio-economic dimensions in shaping students' academic opportunities and success (Jaremus, Pomeroy, and Luoma 2024). (Jaremus, Pomeroy, and Luoma 2024) examine the historical disparities in gender participation in mathematics. Their investigation reveals the persistent nature of these gender differences, but also highlights the significance of an **intersectional approach** that considers factors such as location, race, and class, and sheds light on how the dynamics of gender and mathematics may differ, particularly in marginalised settings.

Another set of studies investigate gender-related challenges that arise as students enter the realm of employability. A study (Martinussen and Mulcahy 2023) highlights that girls in Higher Education encounter employability discourses that consider what goals are considered possible and desirable according to their class and gender position. For instance, the researchers observe distinct imperatives influencing working-class female students engaged in humanities or social sciences careers. These fields are often deemed of lesser value in employability discourses compared to science, technology, engineering, mathematics, and medicine. These imperatives influence students both individually and as a group, adding to the reproduction of class and shaping policy dynamics. In recognition of the relevance of the topic, another qualitative study (Grant and Yates 2023) focuses on teenage girls' experience as participants in the Combined Cadet Force in the UK, examining its positive impact on their perceptions of skills development for future employability.

In relation to the intersection between gender, career selection and employability opportunities, The World Bank Group (WBG) launched a study in 2023 to address the imperative of **reducing the gender gap in STEM fields.** Although the primary focus of this study revolves around Latin America and the Caribbean region, its findings and policy recommendations may prove valuable in diverse global contexts. The study comments on

the critical implications of the underrepresentation of women in STEM careers for the economic development of nations, and advocates for the implementation of incentives aimed at encouraging women to pursue these disciplines. Furthermore, the study recommends addressing gender bias in educational materials, increasing parents' involvement in the students' education, and reshaping family and social attitudes through extracurricular activities (World Bank Group 2023). In line with these policy recommendations, an article in the *Journal of Women and Minorities in Science and Engineering* (Jabbari, Huang, and Odis Johnson 2023) explored the role of non-traditional STEM preparation programmes, such as coding boot camps, as a viable alternative, and whether they effectively promote equity-focused admissions policies. The findings recognise the significance of these programmes in promoting gender equity, although they also reveal persistent limitations concerning race and ethnicity. Finally, one study by (Hu and Fernandez 2023) focused on examining some initiatives to improve faculty gender equity, and examined whether the National Science Foundation's ADVANCE IT is proposed effective actions to promote gender equity when disseminating grant programs in IT. Findings indicate that there is no substantial evidence that this program increased the proportion of headcount women, and to a lesser extent to women in minority racial ethnic groups.

Finally, although efforts are underpinned to promote policies and discourses on diversity and inclusion, multiple studies indicate that racial discrimination is a persistent issue. In the US, studies on Higher Education have found an underlying racialised culture within academia that continues to provide incentives for the commodification and exploitation of racial identities when applying to the faculty job market (Rodgers and Liera 2023). Moreover, when approaching the selection processes for access to college, a quantitative study found a correlation between the implementation of Performance-Based Funding (PBF) policies and a decrease in enrolment among racially minority students, particularly at moderately selective educational institutions (Rosinger et al. 2023)⁴. In order to tackle persistent racial discrimination within schools, policy recommendations propose implementing teacher preparation programs aimed at disrupting colour-evasive and pathologising discourses (Ko et al. 2023). These challenges are not far from those faced by the European Union on issues of discrimination, particularly in relation to migration phenomena. A study of the Italian education system (Santagati and Bertozzi 2023) highlights the importance of discourses of interculturalism as a way of mitigating and deconstructing systemic discrimination against people with a migrant background, although **its success depends on approaching policy as a collective task that combines both top-down and bottom-up actions.**

1.4 The role of teachers in the social dimension of education

The role of teachers is another essential topic to be addressed when focusing on the social dimension of education and training. **Teachers' practices, as well as their working conditions, current challenges and emotional well-being** are considered relevant to ensuring the quality of education at the global level. As the latest PISA report shows, teacher support is particularly important in times of disruption, including the provision of additional pedagogical and motivational support to students (OECD 2023a). Some of the journals and articles in this section indicate which are the current challenges for teachers and their practice, and some innovative approaches to the student-teacher relationship that are being implemented with their initial results. Some also explore the relevance of teachers' emotional well-being, and what are the most innovative strategies and competencies to work on students' behaviour and emotional well-being today.

⁴ The authors considered some limitations due to potential biased sources (Rosinger et al. 2023)

A number of articles explore the challenges of feedback practices across various educational levels. For instance, Nieminen and Carless (2023) discuss the concept of feedback literacy by critically examining the initial 49 published articles on the topic in Higher Education. They indicate that the use of this term reveals a shift from the notion of feedback merely as external-input from teachers; instead, it reframes feedback processes as a psychological construct between individuals (Nieminen and Carless 2023). Moreover, feedback literacy framework introduces a relational dimension to feedback practices, complementing its practical aspect (Carless and Winstone 2023). According to authors, there is significant potential in employing this term, empowering both teachers and students and introducing a stronger socio-cultural element to the discussion (Carless and Winstone 2023; Nieminen and Carless 2023). However, it also poses a **new challenge at the policy level, with the potential risk of overly emphasising on the psychological aspects of students' and teachers' feedback behaviours**, and impacting assessment and grading models. (Leenknecht and Carless 2023) further review studies on the motivations behind seeking feedback, exploring its connection to feedback literacy and its potential applications in organisations, medical education, and the broader Higher Education sphere.

Another emerging trend in the discussion of the role of teachers in education centres on students and teachers' well-being, particularly in light of evidence indicating the short and long-term effects of the COVID-19 pandemic on people's emotional stability and overall well-being. As mentioned earlier, the return to school after extended disruptions has posed numerous challenges for the educational system, with teachers being crucial supporters in facilitating the readjustment to in-person learning. Even before the pandemic, the OECD had pointed out, based on the TALIS 2018 results, that **teachers' stress levels were affecting the attractiveness of the teaching profession** (OECD 2023b).

Jardí et al. (2023) express concerns about the rise in disruptive behaviours in classrooms in Catalonia (Spain) and propose to equip teachers with skills that will help them promote self-regulation behaviours (SRB) among children. The study identifies specific competencies of 923 teaching plans in five Catalan universities, and the perception of teachers to assess which are the most present competencies in teaching plans. Results not only point to a deficiency in promoting SRB skills but also highlight teachers' lack of confidence in supporting children in managing behaviour in the classroom. This underscores the need for policy improvements, both at the practice and curricular levels, to equip teachers and students with SRB skills.

Lynch et al. (2023) studied the concept of "teachers' everyday work-for change" defining it as the consistent and dedicated efforts to implement innovative curriculum in school attended by disadvantaged students. **The study highlights that although these practices require commitment and dedication of teachers, they are not always sustainable** (i.e. integration of digital technologies into the curriculum). Finally, in alignment with these trends, (Tókos et al. 2023) studied the impact of early school leaving in Hungary and identified that a supportive learning environment can help in preventing school leaving.

The third and final trend in the discussions on teaching practices is the examination of innovative proposals for teaching across various educational levels. Børte, Nesje, and Lillejord (2023) conducted a review of research on innovative academic teaching and found that it **remains predominantly traditional and teacher-centred, despite students expressing a desire for new approaches to learning**. The systematic review highlights the need for better alignment between research and teaching practice, improvements in infrastructure, and the development of new learning designs to enhance students' active learning. Moreover, to better align research and practice, it is important to consider designing teachers' trainings to improve student learning based on evidence of actions with

social impact. An example of a contracted innovative classroom strategy has been studied by Pereira et al (2023). They found that out-of-class and in-class activities and teacher performance influenced students' perceptions about the course. Accordingly, there are positive results from the use of these strategies, especially for MBA courses.

1.5 Development of social skills in education

Recent research trends underline the increasing importance of developing students' social skills in the current scenario. As a broad topic, various journals have focused on specific skills considered most relevant to the challenges posed by educational and market demands.

First, a number of studies focus on critical thinking as a relevant transversal skill. It has been identified as **central to improving personal and civic life, as well as a key competence for students to develop**. Although the literature on this topic is diverse and extensive, there is agreement on its importance for the development of democratic societies, especially in the digital knowledge age where students are exposed to excessive sources of information and disinformation. (Vincent- Lancrin 2023) delves into the historical significance of the term and the need to understand **critical thinking as a reflexive and analytical skill, useful for avoiding bias and stereotypical knowledge**. Other authors define critical thinking as the ability to be reflective when approaching information and to identify trustworthy sources (Pasquinelli and Richard 2023).

Studies focusing on the role of critical thinking in formal education explore which are the best strategies for integrating this competence into learning environments and curricular interventions. They point to the importance of mainstreaming these topics using teacher-friendly rubrics, and making critical thinking equitably accessible for all students (Vincent-Lancrin 2023; Davies, Xie, and Girard 2023; Elen and Verburgh 2023). An interesting tool to contribute to this topic in education is the [Adhyayana section of the Social impact platform](#), which provides co-created and participatory instruments to distinguish scientific evidence from hoaxes.

Notably, studies in Higher Education review the intricate interplay between transversal skills (e.g., critical thinking, communication, problem solving and leadership skills) and the multiple contextual factors in each specific context such as gender, ethnicity, and parental education levels of the student (Van Damme et al. 2023; Lee and Chan 2023). These authors also underscore the dynamic set of different factors, and the significance of a cultural dimension, primarily perceptions and beliefs, as influential to these skills' development.

Regarding students' skills in terms of preparedness for the labour market, current trends emphasise a major focus on the social and emotional factors that influence students' access to employability opportunities. A study by Sánchez-Queija et al. (2023) examines the differences in self-perceived employability (SPE) in Higher Education and Vocational Education, and investigating how gender, work experience, and perceptions of job market precariousness impact students. One key finding is that **SPE tends to be higher in Vocational Training than in Higher Education**. At the same level, a study on Poland (Zajac et al. 2023) in Higher Education alerts on skill shortage in STEM areas. It points out issues relating to a mismatch that leads to graduates facing unemployment or underemployment. In addition, another study (Kim 2023) examines the disparities in numeracy achievement among students in vocational programs, in German-speaking and English-speaking countries (UK and US). The study finds a robust relationship between

tracking in upper secondary and post-secondary education and the impact of skills gaps on labour market outcomes.

Finally, another set of studies focuses on Entrepreneurship Education (EE) and its relevance as a social skill for students (Larsen, Blenker, and Neergaard 2023; Tavares Vilas Boas Ribeiro, Mendes Borini, and Ary Plonski 2022; Peura and Hytti 2022; Raappana and Pihkala 2024). Among its multiple findings, some show that **family background, family entrepreneurial environment, and leisure and time activities impact the development of entrepreneurial potential and mind set in young adolescents** (Raappana and Pihkala 2024).

1.6 Parental and community engagement

Recent research trends emphasise the **importance of family and community involvement as support mechanisms in students' learning experiences**. They underline its significance for better academic performance and emotional support in the transition between different levels of education. In addition to the direct benefits in terms of educational outcomes, there is evidence of the benefits of moving towards a more collective and collaborative approach to education in other areas, such as achieving more sustainable lifestyles and advocating for a greener future within the school community.

The European Commission study on whole-schools approach to well-being highlights the relevance of partnership in education, and how policy can assist school level actions into a more cross-sectional collaboration in learning for sustainability (European Commission. Directorate General for Education, Youth, Sport and Culture. 2023). Conclusions on the study **reinforce the potential of approaching this framework for developing capabilities and understanding on collective action**. However, multiple challenges arise, such as the need to develop a curriculum to allow and plan how to promote such partnerships, as well as teachers training and strategies development to achieve effective educational community engagement for more sustainable futures.

At the institutional level there are multiple forms of collaborative action. Nuis et al (2023) discuss the implementation of mentoring practices in Higher Education, and their use as a support, advice and guidance mechanism for student social and emotional skills development. Their systematic literature review found 106 studies that addressed mentoring as a practice, and discusses its main purposes, role of actors, measurements and concludes that in spite of its multiple approaches and definitions, **overall it is a positive tool for building relationships and interpersonal skills, reflexivity, and promoting student achievement and career development**. Furthermore, discussion on the use of collaborative problem solving (CPS) as a global demand in the educational context highlight their use in cognitive processes, group discussions and classroom management (Baucal et al. 2023).

Regarding parental involvement, the OECD report highlighted positive trends in parental engagement on student learning between 2018 and 2022, especially for students in disadvantaged contexts, although they find a decrease in the same period (OECD 2023b). In this regard, Poncelet, Bordalba, and Dierendonck (2023) studied parental involvement and its determinants in secondary education in Belgium, France and Luxembourg. Their quantitative analysis suggests that home and school-based involvement do differ significantly, and that **parental self-efficacy is a central indicator to consider when controlling for students' family background and school environment**.

References

- Baucal, Aleksandar, Smiljana Jošić, Ivana Stepanović Ilić, Marina Videnović, Jovan Ivanović, and Ksenija Krstić. 2023. 'What Makes Peer Collaborative Problem Solving Productive or Unproductive: A Qualitative Systematic Review'. *Educational Research Review* 41 (November): 100567. <https://doi.org/10.1016/j.edurev.2023.100567>.
- Beege, Maik, Noah L. Schroeder, Steffi Heidig, Günter Daniel Rey, and Sascha Schneider. 2023. 'The Instructor Presence Effect and Its Moderators in Instructional Video: A Series of Meta-Analyses'. *Educational Research Review* 41 (November): 100564. <https://doi.org/10.1016/j.edurev.2023.100564>.
- Borodiyenko, Oleksandra, Oksana Melnyk, and Nellia Nychkalo. 2023. 'The Role of International Cooperation in the Development of Vocational Education in Ukraine'. *European Journal of Education* 58 (4): 665–80. <https://doi.org/10.1111/ejed.12586>.
- Børte, Kristin, Katrine Nesje, and Sølvi Lillejord. 2023. 'Barriers to Student Active Learning in Higher Education'. *Teaching in Higher Education* 28 (3): 597–615. <https://doi.org/10.1080/13562517.2020.1839746>.
- Carless, David, and Naomi Winstone. 2023. 'Teacher Feedback Literacy and Its Interplay with Student Feedback Literacy'. *Teaching in Higher Education* 28 (1): 150–63. <https://doi.org/10.1080/13562517.2020.1782372>.
- Chow, Y. W., R. Pietranico, and A. Mukerji. 1975. 'Studies of Oxygen Binding Energy to Hemoglobin Molecule'. *Biochemical and Biophysical Research Communications* 66 (4): 1424–31. [https://doi.org/10.1016/0006-291x\(75\)90518-5](https://doi.org/10.1016/0006-291x(75)90518-5).
- Cumming-Potvin, Wendy. 2023. 'The Politics of School Dress Codes and Uniform Policies: Towards Gender Diversity and Gender Equity in Schools'. *International Journal of Educational Research* 122 (January): 102239. <https://doi.org/10.1016/j.ijer.2023.102239>.
- Davies, Maree, Yan Xie, and Patrick Girard. 2023. 'Valuing Adolescent Students' Street Smarts to Foster Critical Thinking'. *European Journal of Education* 58 (3): 447–61. <https://doi.org/10.1111/ejed.12567>.
- Day, Laurie, Flavia Colonnese, Alessandro Gasparotti, Olga Batura, Maria Melstveit, Niklas Olausson, and William Hammonds. 2023. *Digital Education Content in the EU: State of Play and Policy Options: Final Report*. LU: Publications Office. <https://data.europa.eu/doi/10.2766/682645>.
- Demszky, Dorottya, Jing Liu, Heather C. Hill, Dan Jurafsky, and Chris Piech. 2023. 'Can Automated Feedback Improve Teachers' Uptake of Student Ideas? Evidence From a Randomized Controlled Trial in a Large-Scale Online Course'. *Educational Evaluation and Policy Analysis*, May, 016237372311692. <https://doi.org/10.3102/01623737231169270>.
- Elen, Jan, and An Verburgh. 2023. 'Fostering Critical Thinking: Features of Powerful Learning Environments'. *European Journal of Education* 58 (3): 434–46. <https://doi.org/10.1111/ejed.12568>.
- Elkin, Oleksandr, Oleg Marushchenko, Olena Masalitina, Olha Rasskazova, Tetiana Drozhzhyna, and Kateryna Zhurba. 2023. 'Civil Society Organisations Transforming Teacher Professional Development: Social, Emotional, and Ethical Learning in Wartime Ukraine'. *European Journal of Education* 58 (4): 595–610. <https://doi.org/10.1111/ejed.12596>.
- European Commission. Directorate General for Education, Youth, Sport and Culture. 2023. *Collaboration, Partnership and Whole-School Approaches: Key Questions and Challenges: Input Paper*. LU: Publications Office. <https://data.europa.eu/doi/10.2766/245763>.

European Commission. Joint Research Centre. 2023. *The Impact of Covid-19 Physical School Closure on Student Performance in OECD Countries: A Meta Analysis*. LU: Publications Office. <https://data.europa.eu/doi/10.2760/197242>.

Grant, Lisa, and Julia Yates. 2023. 'Girls in the Combined Cadet Force: A Qualitative Exploration of the Impact of Their Experiences on Their Graduate Employability Skills'. *Education + Training* 65 (8/9): 1006–22. <https://doi.org/10.1108/ET-03-2022-0101>.

Herbst, Mikołaj, and Michał Sitek. 2023. 'Education in Exile: Ukrainian Refugee Students in the Schooling System in Poland Following the Russian–Ukrainian War'. *European Journal of Education* 58 (4): 575–94. <https://doi.org/10.1111/ejed.12587>.

Hu, Xiaodan, and Frank Fernandez. 2023. 'An ADVANCE for Whom? A National Study of Initiatives to Improve Faculty Gender Equity'. *Educational Evaluation and Policy Analysis*, September, 01623737231197683. <https://doi.org/10.3102/01623737231197683>.

Jabbari, Jason, Wenrui Huang, and Jr Odis Johnson. 2023. 'BROADENING PARTICIPATION IN STEM THROUGH ALTERNATIVE PREPARATION PROGRAMS: AN EXPLORATION OF RACE, GENDER, AND ADMISSIONS POLICIES IN A CODING AND APPRENTICESHIP PROGRAM'. *Journal of Women and Minorities in Science and Engineering* 29 (6). <https://doi.org/10.1615/JWomenMinorScienEng.2022041267>.

Jabbari, Jason, Haotian Zheng, Stephen Roll, Daniel Auguste, and Oren Heller. 2023. 'How Did Reskilling During the COVID-19 Pandemic Relate to Entrepreneurship and Optimism? Barriers, Opportunities, and Implications for Equity'. *Journal of Family and Economic Issues*, May. <https://doi.org/10.1007/s10834-023-09906-y>.

Jardí, Andrea, Cristina Petreñas, Elena Cano, and Laura Pons-Seguí. 2023. 'The Promotion of Self-Regulation of Children's Behaviour, an Unresolved Issue in Initial Teacher Education in Catalonia (Spain)'. *International Journal of Educational Research* 122: 102263. <https://doi.org/10.1016/j.ijer.2023.102263>.

Jaremus, Felicia, David Pomeroy, and Tiina Luoma. 2024. 'Boys on the Margins of Mathematics in Finland, Australia, and New Zealand: Rethinking Gendered Binaries'. *International Journal of Educational Research* 123 (January): 102276. <https://doi.org/10.1016/j.ijer.2023.102276>.

Kalenda, Jan, Ilona Kočvarová, and Ellen Boeren. 2023. 'Impact of COVID -19 on Participation and Barriers in Nonformal Adult Education in the Czech Republic'. *European Journal of Education* 58 (4): 681–98. <https://doi.org/10.1111/ejed.12580>.

Kim, Suehye. 2023. 'Vocational Education and Numeracy Acquisition of Young Adults: A Comparison of Education Systems in German and English Speaking Countries'. *European Journal of Education* 58 (4): 699–718. <https://doi.org/10.1111/ejed.12578>.

Ko, Dosun, Dian Mawene, Boris Krichevsky, and Sumin Lim. 2023. 'Organizing Possible Futures: A Systematic Review on Dis/Ability Justice Frameworks to Design Equity-Oriented Inclusive Teacher Education Programs'. *Review of Educational Research*, November, 00346543231212927. <https://doi.org/10.3102/00346543231212927>.

Larsen, Inge Birkbak, Per Blenker, and Helle Neergaard. 2023. 'The Entrepreneurial Mindset in Entrepreneurship Education: What Can We Learn from S-O-R Models?' *Education + Training* 65 (8/9): 1043–69. <https://doi.org/10.1108/ET-09-2022-0364>.

Lee, Katherine K. W., and Cecilia K. Y. Chan. 2023. 'Establishing a Dynamic Understanding of Factors That Influence University Students' Leadership Approaches, Perceptions, and Skills through a Systematic Literature Review'. *Educational Research Review* 41 (November): 100570. <https://doi.org/10.1016/j.edurev.2023.100570>.

Leenknecht, Martijn J.M., and David Carless. 2023. 'Students' Feedback Seeking Behaviour in Undergraduate Education: A Scoping Review'. *Educational Research Review*

40 (August): 100549. <https://doi.org/10.1016/j.edurev.2023.100549>.

Lugovy, Volodymyr, Svitlana Kalashnikova, Zhanneta Talanova, and Inna Vlasova. 2023. 'Transformation of Higher Education in Ukraine: Impact of the War and Objectives for Post-war Recovery'. *European Journal of Education* 58 (4): 611–28. <https://doi.org/10.1111/ejed.12584>.

Lynch, Julianne, Glenn Auld, Joanne O'Mara, and Anne Cloonan. 2023. 'Teachers' Everyday Work-for-Change: Implementing Curriculum Policy in "Disadvantaged" Schools'. *Journal of Education Policy*, August, 1–19. <https://doi.org/10.1080/02680939.2023.2245794>.

Mancenido, Zid. 2023. 'Impact Evaluations of Teacher Preparation Practices: Challenges and Opportunities for More Rigorous Research'. *Review of Educational Research*, May, 003465432311744. <https://doi.org/10.3102/00346543231174413>.

Maneksha, S., and T. V. Harry. 1975. 'Lorazepam in Sexual Disorders'. *The British Journal of Clinical Practice* 29 (7): 175–76.

Martinussen, Maree, and Dianne Mulcahy. 2023. 'Working-Class Student-Hood and "Job-Readiness": Affective Relations of Class, Gender and Employability Policy in Higher Education'. *Journal of Education Policy*, June, 1–19. <https://doi.org/10.1080/02680939.2023.2228755>.

Morze, Nataliia, Eugenia Smyrnova-Trybulska, Martin Drlík, and Oksana Buinytska. 2023. 'Development of Advanced Digital Ecosystems at Universities: A Study Comparing Experiences from Ukraine, Poland and Slovakia'. *European Journal of Education* 58 (4): 647–64. <https://doi.org/10.1111/ejed.12588>.

Mouratoglou, Nikolaos, Irene Pateraki, and Santi Scimeca. 2023. *The Impact of eTwinning on Initial Teacher Education: Placing Teacher Educators and Student Teachers in the Spotlight: Full Monitoring Report*. LU: Publications Office. <https://data.europa.eu/doi/10.2797/908466>.

Nieminen, Juuso Henrik, and David Carless. 2023. 'Feedback Literacy: A Critical Review of an Emerging Concept'. *Higher Education* 85 (6): 1381–1400. <https://doi.org/10.1007/s10734-022-00895-9>.

Nuis, Wendy, Mien Segers, and Simon Beusaert. 2023. 'Conceptualizing Mentoring in Higher Education: A Systematic Literature Review'. *Educational Research Review* 41 (November): 100565. <https://doi.org/10.1016/j.edurev.2023.100565>.

OECD. 2023a. 'Unravelling the Layers of Teachers' Work-Related Stress'. *Teaching in Focus* 46. <https://doi.org/10.1787/bca86c20-en>.

———. 2023b. *PISA 2022 Results (Volume II): Learning During – and From – Disruption*. PISA. OECD. <https://doi.org/10.1787/a97db61c-en>.

Orzhel, Olena, Mykola Trofymenko, Olha Porkuian, Iryna Drach, Ruslan Halhash, and Andriy Stoyka. 2023. 'Displaced Universities in Ukraine: Challenges and Optimal Development Models'. *European Journal of Education* 58 (4): 629–46. <https://doi.org/10.1111/ejed.12581>.

Ovcharuk, Oksana, Iryna Ivaniuk, and Mariya Leshchenko. 2023. 'Impact of School Lockdown on Access to Online Instruction during the War in Ukraine'. *European Journal of Education* 58 (4): 561–74. <https://doi.org/10.1111/ejed.12589>.

Pasquinelli, Elena, and Olivier Richard. 2023. 'Critical Thinking as the Ability to Sort and Qualify the Information Available, to Form One's Own Judgement'. *European Journal of Education* 58 (3): 422–33. <https://doi.org/10.1111/ejed.12565>.

Pennacchia, Jodie. 2023. 'Exclusionary Tactics in English Secondary Education: An

- Analysis of Fair Access Protocols'. *Journal of Education Policy*, June, 1–22. <https://doi.org/10.1080/02680939.2023.2222409>.
- Pereira Bueno, Ricardo Luiz, Fernando Antonio Ribeiro Serra, and Isabel Cristina Scafuto. 2023. 'Executive Perceptions of Course and Educator Performance on Flipped Classroom'. *Education + Training* 65 (8/9): 1023–42. <https://doi.org/10.1108/ET-08-2022-0337>.
- Pereira, Daniela S.M., Filipe Falcão, Lilian Costa, Brian S. Lunn, José Miguel Pêgo, and Patrício Costa. 2023. 'Here's to the Future: Conversational Agents in Higher Education- a Scoping Review'. *International Journal of Educational Research* 122: 102233. <https://doi.org/10.1016/j.ijer.2023.102233>.
- Peura, Kirsi, and Ulla Hytti. 2022. 'Identity Work of Academic Teachers in an Entrepreneurship Training Camp: A Sensemaking Approach'. *Education + Training* 65 (4): 548–64. <https://doi.org/10.1108/ET-06-2021-0203>.
- Poncelet, Débora, Monica Macia Bordalba, and Christophe Dierendonck. 2023. 'Parental Involvement in Secondary Education in Belgium, France and Luxembourg: Associations with Family and School Characteristics'. *European Journal of Education* 58 (4): 719–40. <https://doi.org/10.1111/ejed.12590>.
- Quinn, David M. 2023. 'Framing Effects and the Public's Attitudes Toward Racial Equity in Education Policy'. *Educational Evaluation and Policy Analysis*, October, 01623737231200202. <https://doi.org/10.3102/01623737231200202>.
- Raappana, Anu, and Timo Pihkala. 2024. 'Three Explanations for the Development of Adolescents' Entrepreneurial Potential'. *International Journal of Educational Research* 123 (January): 102272. <https://doi.org/10.1016/j.ijer.2023.102272>.
- Rodgers, Aireale J., and Román Liera. 2023. 'When Race Becomes Capital: Diversity, Faculty Hiring, and the Entrenchment of Racial Capitalism in Higher Education'. *Educational Researcher* 52 (7): 444–49. <https://doi.org/10.3102/0013189X231175359>.
- Rosinger, Kelly, Justin Ortagus, Robert Kelchen, and Junghee Choi. 2023. 'The Impact of Performance Funding Policy Design on College Access and Selectivity'. *Educational Evaluation and Policy Analysis* 45 (4): 655–81. <https://doi.org/10.3102/01623737221147905>.
- Sánchez-Queija, María Inmaculada, Laura Sánchez-García, Andrew T. Rothwell, and Águeda Parra. 2023. 'Differences in Self-Perceived Employability between University and VET Students: An Analysis of Emerging Adults in Spain'. *Education + Training* 65 (10): 14–28. <https://doi.org/10.1108/ET-09-2022-0366>.
- Santagati, Mariagrazia, and Rita Bertozzi. 2023. 'Rethinking Interculturalism, Deconstructing Discrimination in Italian Schools'. *International Migration*, August, imig.13175. <https://doi.org/10.1111/imig.13175>.
- Smith, R. J., and R. G. Bryant. 1975. 'Metal Substitutions Incarbonic Anhydrase: A Halide Ion Probe Study'. *Biochemical and Biophysical Research Communications* 66 (4): 1281–86. [https://doi.org/10.1016/0006-291x\(75\)90498-2](https://doi.org/10.1016/0006-291x(75)90498-2).
- Sondermann, Christina, and Martin Merkt. 2023a. 'Like It or Learn from It: Effects of Talking Heads in Educational Videos'. *Computers & Education* 193 (February): 104675. <https://doi.org/10.1016/j.compedu.2022.104675>.
- . 2023b. 'What Is the Effect of Talking Heads in Educational Videos with Different Types of Narrated Slides?' *Contemporary Educational Psychology* 74 (July): 102207. <https://doi.org/10.1016/j.cedpsych.2023.102207>.
- Sordé-Martí, Teresa, Adnan Abdul Ghani, Bilal Almobarak, Tiziana Chiappelli, Ainhoa Flecha, Mina Hristova, Anna Krasteva, et al. 2023. 'The REFUGE-ED Dialogic Co-Creation

Process: Working with and for REFUGE-ED Children and Minors'. *Humanities and Social Sciences Communications* 10 (1): 463. <https://doi.org/10.1057/s41599-023-01967-6>.

Tamblyn, Andrea, Helen Skouteris, Angela North, Yihan Sun, Tamara May, Elaine Swart, Nicci Godsman, and Claire Blewitt. 2023. 'Physical and Sensory Environment Interventions to Support Children's Social and Emotional Development in Early Childhood Education and Care Settings: A Systematic Review'. *Early Child Development and Care* 193 (5): 708–24. <https://doi.org/10.1080/03004430.2022.2152017>.

Tamblyn, Andrea, Yihan Sun, Tamara May, Maria Evangelou, Nicci Godsman, Claire Blewitt, and Helen Skouteris. 2023. 'How Do Physical or Sensory Early Childhood Education and Care Environment Factors Affect Children's Social and Emotional Development? A Systematic Scoping Review'. *Educational Research Review* 41 (November): 100555. <https://doi.org/10.1016/j.edurev.2023.100555>.

Tavares Vilas Boas Ribeiro, Artur, Felipe Mendes Borini, and Guilherme Ary Plonski. 2022. 'The Question of Where: Entrepreneurship Education beyond Curricular Practices'. *Education + Training* 65 (4): 513–29. <https://doi.org/10.1108/ET-10-2021-0393>.

Tókos, Katalin, Judit Takácsné Kárász, Nóra Rapos, Sándor Lénárd, and Judit Szivák. 2023. 'Classroom Learning Environments and Dropout Prevention in Hungary'. *European Journal of Education* 58 (4): 741–58. <https://doi.org/10.1111/ejed.12591>.

Van Damme, Dirk, Doris Zahner, Olivia Cortellini, Teresa Dawber, and Kelly Rotholz. 2023. 'Assessing and Developing Critical-thinking Skills in Higher Education'. *European Journal of Education* 58 (3): 369–86. <https://doi.org/10.1111/ejed.12563>.

Vincent-Lancrin, Stéphan. 2023. 'Fostering and Assessing Student Critical Thinking: From Theory to Teaching Practice'. *European Journal of Education* 58 (3): 354–68. <https://doi.org/10.1111/ejed.12569>.

World Bank Group. 2023. 'Attracting More Young Women into Stem Fields'. LAC Gender Notes. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/257831642743451543/Attracting-More-Young-Women-into-Stem-Fields>.

Zajęc, Tomasz Z., Tomasz Żóltak, Marek Bożykowski, and Mikołaj Jasiński. 2023. 'All That Glitters Is Not Gold—Mixed Early Labour Market Outcomes of STEM Graduates in Poland'. *European Journal of Education* 58 (3): 477–97. <https://doi.org/10.1111/ejed.12564>.