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Tackling the Digital Divide? A Comparative Policy Analysis of International Organizations' Varying Approaches to the Digitalization of Education

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ABSTRACT *This paper explores how international organizations (IOs) identify similar problems while endorsing different strategies. It examines how IOs address a fair and accessible digital education environment that reduces the digital divide. Using mixed methods, the article analyzes documents from 22 IOs. The quantitative analysis reveals the diverse concepts associated with digitalization. A qualitative content analysis delves into the strategies employed by four distinct cases of IOs – African Union, EU, OECD, and UNESCO. The article argues that while many IOs address digitalization in education as a global standard, their institutional characteristics shape their policy recommendations on the issue.*

Keywords: Comparative policy analysis; digitalization; education policy; international organizations

Introduction

Although digitalization has been a central issue in the field of education for the last several decades, the COVID-19 pandemic has invigorated the discussion of how education can be delivered using information and communication technology (ICT). At the same time, the COVID-19 pandemic also energized the discussion about inequality and uneven access to ICT, within and also among states. While some countries struggled to decide on unified platforms for online teaching methods, others struggled with connecting students to the internet at all, thus demonstrating that issues of inclusiveness are still

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pressing in the age of digitalization (UNICEF 2022). These differences are not new and have previously been discussed under the label of the so-called “digital divide”, which emphasizes a gap in expanding digitalization in the education sector between countries of the Global South and industrialized Western states of the Global North.

Even before COVID-19 hit the globe, international organizations (IOs) praised the digitalization of education as a development potential for national education systems, particularly for countries of the Global South (Middlehurst and Woodfield 2006; McKay and Makhanya 2008; UNESCO 2020). However, due to the limited amount of research, we know little about which IOs have tackled the issue of digitalization of education and what they promote. In this contribution, we seek to fill this gap and explore how IOs contribute to the debate on educational digitalization. Therefore, we ask: How do IOs address the digitalization of education? What are the forms and content of their recommendations and policy programs? And what differences can we observe between types of IOs?

On the one hand, the theoretical framework of our paper corresponds with sociological institutionalism and, on the other hand, it includes insights from institutional design approaches to IOs. One of the basic assumptions of sociological institutionalism is that (policy) ideas and norms diffuse around the globe and thus become increasingly similar over time. Most IOs have a rational–legal bureaucratic structure and employ Western scientific methods for evidence production for policymaking (Barnett and Finnemore 2004). Accordingly, education ideas and practices originate in Western models and, therefore, most education systems follow a similar (Western) structure; this ultimately leads to a common world culture of education (Meyer et al. 1997). However, sociological institutionalism does not differentiate between types of IOs as distributors of norms and cannot alone explain any variety between IOs or the breadth of issues discussed by them. While sociological institutionalism’s inherent concept of decoupling makes concessions to the level of actual implementation of a norm, institutional design approaches to IOs can explain the variance in what norms are emphasized and distributed by different types of IOs (Lenz et al. 2015). Hence, institutional characteristics of IOs must be included in the theoretical model. Institutional characteristics can provide an explanation of how the authority of an IO influences the discussion of issues. For example, while utilizing a globally accepted idea may boost an organization’s authority, the availability of (material) resources also determines the actual room for an IO to maneuver. Regional organizations in particular are therefore torn between adhering to global agendas and regional needs. We expect this tension to result in the discussion of similar issues by many IOs, but the interpretation of these issues might be subject to the specific IO and not necessarily shaped by the anticipated world culture.

In our study, we apply a mixed-methods approach. Using quantitative methods, we explore the range in which IOs discuss topics of digitalization in education differently. We then contrast our findings with qualitative, in-depth case studies of individual IOs. By analyzing the policy publications of four IOs with content analysis methods, we evaluate if IOs hold similar views on digitalization in education – as sociological institutionalism suggests – and examine if divergences in views can be explained by differences in the institutional design of IOs. To discover how IOs discuss the digitalization of education if there are differences, and how these differences take shape, we examine the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Organisation

for Economic Co-operation and Development (OECD), the EU, and the African Union (AU). These organizations correspond with the criteria of (Northern versus Southern IO) membership and (regional versus global) operating focus.

This paper is structured as follows. We first provide the theoretical framework for our study, in which we combine assumptions of sociological institutionalism with institutional design approaches to different types of IOs and the digital divide. We then approach our empirical analysis using a mixed-methods tactic and combine a quantitative approach with qualitative case studies. We argue that while digitalization has become a topic of great concern over the last two decades, COVID-19 has functioned as a “booster”, particularly for those IOs that have already been advocates of this medium for learning. By comparing the four IOs (AU, EU, OECD, and UNESCO), we identified different approaches to how educational digitalization and preferences for policy agendas and programs were framed. While, for example, both IOs with a global reach in education (OECD and UNESCO) comprehensively referred to identified problems, the regional EU applied a framing that mostly highlighted opportunities for educational digitalization and the regional AU did not frame the topic in terms of problems and opportunities. We thus highlight the difference between organizations based on institutional design and scope.

Theoretical Framework: Sociological Institutionalism and the Institutional Design of IOs

Sociological institutionalism states that not only are education systems becoming similar around the world, but the means to deliver education follow what is considered a world culture (Meyer et al. 1997). This world culture prescribes which ideas should be prioritized and what can be considered viable options in introducing reforms in education policy. Hence, sociological institutionalism provides an explanation as to why different stakeholders, like IOs, promote similar solutions and discuss issues similarly. This theoretical approach also incorporates mechanisms that address differences in how an issue is discussed and how a policy is actually implemented (decoupling). Policies might be adopted similarly on paper – in alignment with world culture – but the implementation might not occur or may deviate from the role model. Given the normative pressure in their environments, organizations and states learn to distinguish between actual performance and “myth and ceremony” (Meyer and Rowan 1977; Bromley and Powell 2012; Meyer and Bromley 2013). IOs are actors of world culture, taking part in the creation and spread of a common world model of policy. Moreover, in this view, IOs are the embodiment of the world culture since they represent the amalgam of global norms and institutions in single organizational units (Boli and Thomas 1999).

Insights from institutional design approaches to IOs provide for analyzing differences between IOs in a world culture. Hooghe et al. (2019), for example, discuss how several factors originating from IOs’ institutional design influence to what degree and how IOs approach policies. Some IOs foster community, wherein states pool decision-making based on shared normative principles. These IOs are most often general-purpose organizations with a larger portfolio and less well-specified purposes. Other IOs are task-specific, addressing a common problem with contractually specified tasks. There is a resulting tension between scale and community, which leads to differences in

membership and scope between the different types of IOs. A larger membership base often results in more disagreement between the members, and thus requires a different governing process than smaller IOs with fewer members or limited, specified tasks (Lenz et al. 2015).

A multitude of factors influence how IOs operate, and how they discuss topics. While following a global agenda may be a possibility for some IOs – as postulated by sociological institutionalism – due to the differences in IOs’ institutional design, this assumption might be too broad to apply to the entire population of education IOs. Therefore, we expect instead that while digitalization of education has been established as a global agenda and is subsequently taken up by many IOs, the institutional particularities of each organization lead to an IO-specific interpretation of what “digitalization” means, depending on *membership rules* and *scope*. Moreover, IOs are reliant on states as members, and they are in a distinct position. As actors in their own right and by pooling of authority and expertise within the respective IO, they have a certain degree of autonomy and can set topics they perceive as important on the agenda of world culture (Hooghe and Marks 2015). Overall, IOs act as the transmitters of ideas in and across member states. Taking into account that the challenges and chances of digital learning vary tremendously depending on geographical, cultural, and technical conditions, we expect that IOs differ regarding their policies on digitalization.

We hypothesize that IOs differ in their approach to the digitalization of education in two ways. First, we identify differences regarding the IO’s policy program on educational digitalization depending on *membership rules*. While globally active IOs with universal membership rules are needed to produce (primarily) one-size-fits-all solutions and focus on normative goals, regionally active IOs with restricted membership rules are better at incorporating the distinct needs of their members and referring to specific policy programs. Secondly, we assume that an IO’s *scope* influences how it deals with digitalization. IOs which primarily target countries in the Global North and IOs which target the Global South have different priorities in their policy programs. Since the digital infrastructure in industrialized countries is widely expanded, basic technical needs for providing digital infrastructure should not be the focus of the policy documents they produce. In addition, basic education is provided widely through their education systems. Thus, their aims with digitalization may be set on continuing education as a lifelong learning strategy. IOs targeting the Global South instead may be suffering from the lack of basic facilities for delivering ICT-supported learning. Therefore, the topics these IOs address may be more fundamental with respect to educational needs, such as the provision of basic digital education to remote areas. To summarize, while there is a tendency towards homophily in ideas across IOs according to sociological institutionalism, we ultimately expect distinct differences in how IOs deal with the digitalization of education depending on their institutional design. Accordingly, we hypothesize that there are differences between global and regional IOs, as well as a North–South divide.

Data Set and Mixed-Methods Approach: Quantitative Text Analysis and Case Studies

We build on previous work that identified 30 IOs that work on education policy (Niemann and Martens 2021). Out of the 30 education IOs, 22 deal with issues of

educational digitalization, and at least two IOs in each world region have produced policy papers on digitalization: Middle East and North Africa (MENA) region (Arab League Educational, Cultural and Scientific Organisation (ALESCO), Arab Bureau of Education for the Gulf States (ABEGS)), Asia (Asian Development Bank (ADB), Asia-Pacific Economic Cooperation (APEC), Association of Southeast Asian Nations (ASEAN), South Asian Association for Regional Cooperation (SAARC)), Africa (AU, African Development Bank (AfDB)), America (Organization of American States (OAS), Inter American Development Bank (IADB)), Caribbean (Caribbean Community (CARICOM), Organisation of Eastern Caribbean States (OECS)), Europe (European Free Trade Association (EFTA), EU); there are also transregional (Commonwealth, Organization of Ibero-American States for Education, Science and Culture (OEI)) and globally active IOs (United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations High Commissioner for Refugees (UNHCR), United Nations International Children's Emergency Fund (UNICEF), World Bank, International Labour Organization (ILO), OECD). In total, we found 339 documents on the digitalization of education published by the 22 IOs in our sample between 1978 and 2022, with 1978 being the first year in which a document mentions the topic of digitalization in the context of education.

Extracting an IO's opinion on a certain topic often requires a thorough reading of its documents on a specific issue – a task that is often unfeasible given the sheer number of documents published. Our solution is to apply a mixed-methods approach. The use of coarser quantitative methods allows us to process these large bodies of textual data and gives us the opportunity to extract broader issues and patterns raised by IOs in this context. Alternatively, qualitative discourse analysis makes it possible to dissect their positions and contextualize the discussions concerning educational digitalization. For this paper, we selected the following four IOs according to our theoretical differentiation: AU, EU, OECD, and UNESCO (see Table 1). The quantitative approach aims at identifying how the issues of digitalization in education were approached by different IOs. The descriptive methods and comparison of documents allow us to determine whether these IOs discuss the digitalization of education similarly. However, our research reveals that each IO has its own focus. In the second step, our qualitative analysis of IO documents enables us to trace how arguments for educational digitalization were framed by individual IOs over time.

Assessing the spatial and temporal variation in the discursive patterns of different IOs allows us to link specific IO traits to how they discuss the issue of digitalization in education. In this regard, IO characteristics are independent variables that explain differences and similarities in how IOs depict issues of educational digitalization.

Table 1. Selection of IOs

Membership scope	Global reach	Regional reach
<i>Reflects primarily Global North</i>	OECD	EU ⁶
<i>Reflects primarily Global South</i>	UNESCO	AU

How IOs Address the Digitalization of Education

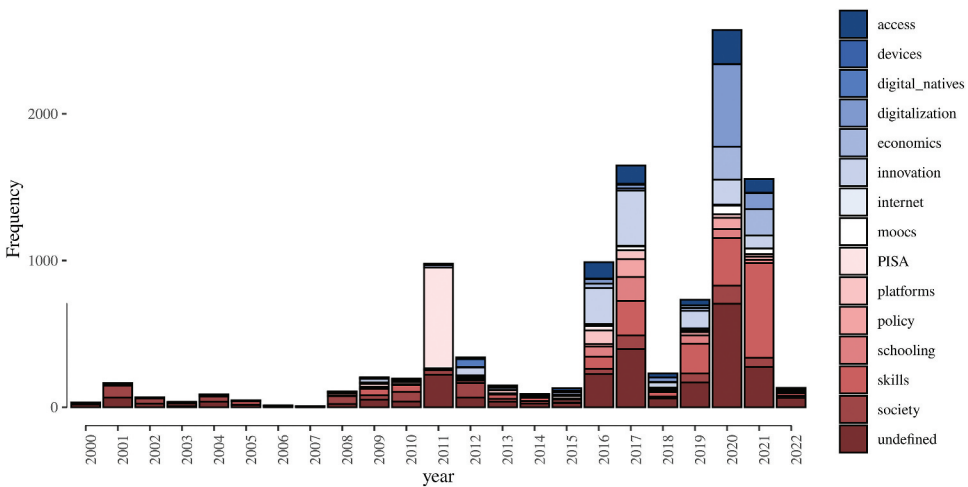
When the COVID-19 pandemic hit the world in 2020, debates about the digitalization of education, access to ICT, and skills for applying software for learning processes gained significant importance worldwide. COVID-19 functioned as a historic juncture to foster technological developments and the spread and usage of online tools. Most developed countries of the Global North realized the limitations of their digital infrastructures and quickly responded by introducing comprehensive measures for online teaching and learning; however, Global South countries often had limited access to ICT. The rural population in particular suffered tremendous learning losses, widening the gap in educational inequality (UNICEF 2020; Sayed et al. 2021). Overall, it is safe to say that COVID-19 was the catalyst for the recent focus on digital learning processes on a policymaking level. It can be expected that the pandemic also triggered a proliferation of publications on digital education amongst IOs.

However, even before the pandemic, several education IOs had dealt with the issue of digitalization and published programmatic outputs on this issue. While some IOs only superficially touched upon educational digitalization and mostly addressed the topic without providing policy recommendations, others placed it at the center of their activities. The two interrelated questions in this section address which topics are associated with digitalization by the four IOs in our sample and how the policy positions of the IOs developed over time. By taking both our theoretical perspectives (sociological institutionalism and institutional design approach to IO) and our mixed-methods design (quantitative and qualitative analyses) into account, we show that the topic of educational digitalization across IOs is approached from various angles.

Exploring IOs' Programs on Educational Digitalization

To determine how IOs framed the discussion around digitalization, we performed a series of descriptive analyses. First, we examined the 22 IOs in our sample with a collocation analysis to determine which concepts are mentioned most frequently in the same sentence with “digitalization”. The result revealed that the issues are widespread and unclear: no IO had one clear focus. The variety of topics also changed significantly over time. Figure 1 shows that the frequency of documents is tied to external events – the digital Programme for International Student Assessment (PISA) assessment in 2009 is followed by reports on the assessment in 2011, and the COVID-19 pandemic resulted in more documents focusing on digitalization in general in 2020 and skills development in 2021. While this finding indicates that COVID-19 constitutes a historical juncture for the discourse of IOs on educational digitalization, there was no clear focus by any IO on what “digitalization” could mean.

Second, we focused on the four IOs chosen as case studies to identify whether the wide spectrum of topics is caused by different characteristics of these IOs. We used a word cloud – despite their descriptive character – to give a rough overview of the vocabulary used by each IO and for a basic indication of the similarity of the discussion topics. Third, we determined the similarity of the texts by comparing the documents on their similarity with a TF-IDF (Term Frequency–Inverse Document Frequency) weighting, then identifying and comparing the words with the highest rating for each IO.

Figure 1. Theme distribution over time

Overall, 148 documents published between 1985 and mid-2022 were quantitatively analyzed. The majority of the documents were published by the EU (82 documents), followed by the OECD with 39 documents, UNESCO with 19 documents, and the AU with 8 documents.¹

Figure 2 shows the words by IO which appear at least 50 times in the respective documents. The plot shows that while the EU is discussing higher education and training (as well as e-learning and lifelong learning), the AU focuses on continent-specific education topics, women, economic development, security, and trade. UNESCO, on the other hand, discusses distance learning, university education, and technology. The OECD seems to be more concerned with student achievement and country comparisons. It becomes clear that each IO may have a different perception of the concept of digitalization. While the IOs seem to differ, there is also no clear topic for the IOs individually.

To further our understanding of the IOs' approaches to digitalization, we compared the texts with information retrieval (IR) techniques, namely Inverse Document Frequency (tf-idf) and Jaccard similarity. The comparison of the vocabulary used by each IO regarding digitalization provides insight into their respective viewpoints (Manning et al. 2008). By analyzing the overlap of terms among the IOs' discussions, we can assess whether they share similar perspectives on this topic. Additionally, to validate the uniqueness of the IOs' views on digitalization, we contrast their vocabularies with another (random) text that shares similar properties: UN general debate speeches extracted from the quanteda package in R (Benoit 2020). These additional texts serve as a control, allowing us to gauge whether the similarities observed among the IOs' discussions are specific to the topic of digitalization or merely reflect general language patterns.

If the overlap between the IOs' vocabularies discussing digitalization is notably higher compared to their overlap with the control text, it suggests a common understanding or approach to digitalization among the IOs. Conversely, if the similarity to the control text

Figure 2. Word cloud comparison between IOs



is comparable to or even greater than the similarity among the IOs, it indicates that the language used by the IOs may not be unique to discussions on digitalization but rather reflects broader linguistic trends.

Table 2 shows the Jaccard similarity of the different documents, measuring the number of shared words between categories (here IOs). The highest similarity is between the EU and OECD documents, with 11 per cent overlapping vocabulary. Further, UNESCO and OECD documents share a 7 per cent similarity. All other documents are less than 5 per cent similar. Overall, the distinction between the IO documents and the UN speeches is as great as the difference between documents from the EU and the AU or the OECD and the AU. This indicates that the documents do not share a large amount of vocabulary. Instead, they focus on their distinct interpretation and discussion of the same issue, while also not focusing on one topic alone. If one of the IOs is focused on

Table 2. TF-IDF scores comparison

	AU	EU	OECD	UNESCO	UN speeches
AU	1	0.03	0.03	0.05	0.05
EU		1	0.11	0.06	0.02
OECD			1	0.07	0.02
UNESCO				1	0.04
UN speeches					1

a singular topic, the distinction from the UN speeches would be greater given their variety of topics. Instead, the similarity between the UN speeches and the IO documents is comparable to the similarity between the IO documents, indicating that no individual group of documents is notably distinct from the others, due to a focus on a singular topic. This supports the overall finding that each IO discusses digitalization from a unique but rather broad perspective.

A look at the words used most often by IO (Figure 3) provides an additional indicator for the diverse perceptions of digitalization of education by different IOs. While the African Union is discussing the African continent, trade, women, and youth, the EU focuses on universities, information, and data. The OECD discusses students more frequently, while UNESCO is the only organization focusing on ICT, technology, and distance education, as far as coarse quantitative methodology can reveal.

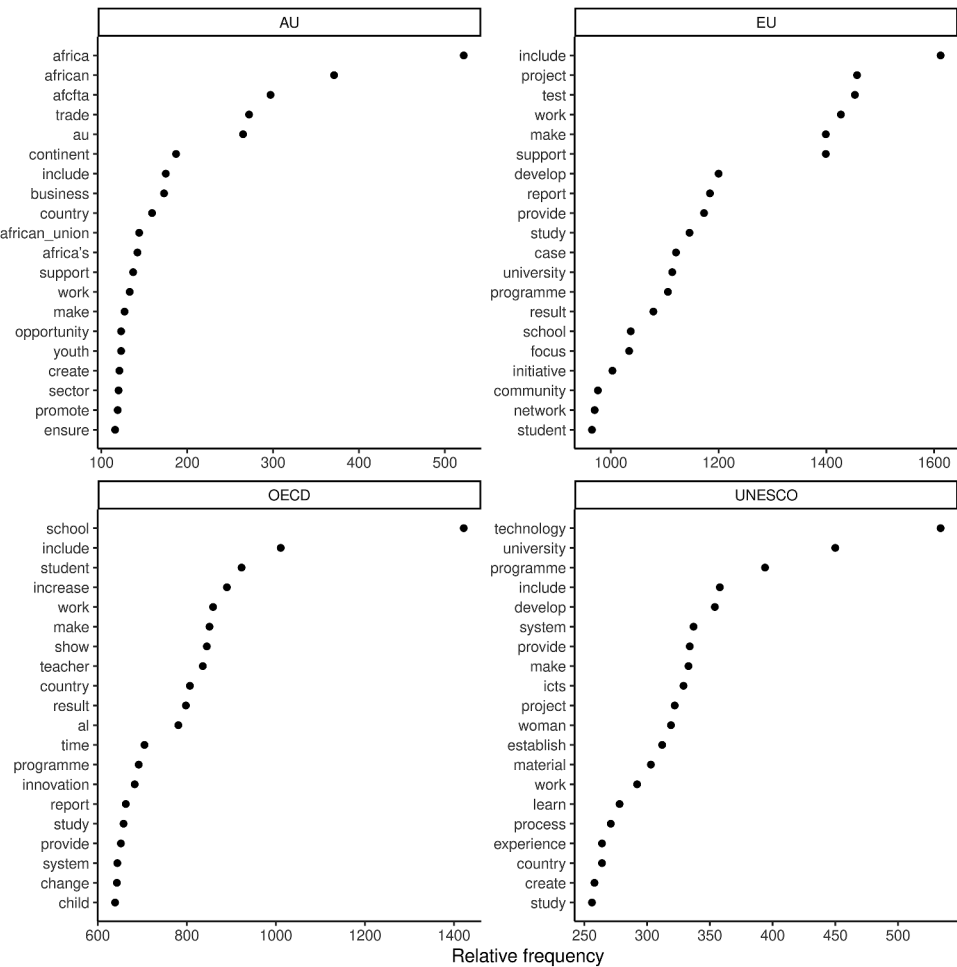
On the surface, it seems that IOs do not share a unified interpretation of the digitalization of education. There is neither a consensus on what that concept entails, a common theme discussed by all IOs, nor a clear distinction between IOs. Therefore, we take an in-depth look at IOs' outputs to determine whether this plurality of issues is limited to the discussion of the status quo or if it additionally pertains to the policy recommendations of the organizations.

Tracing IO Positions on Digitalization

In the second step, we analyze how IOs discursively framed the topic of digitalization in education and how they translated these frames into concrete policy programs and policy recommendations. In our qualitative content analysis of IO documents, we examine three questions on the documents: First, how is the issue associated with educational digitalization framed (as a problem, opportunity, or neutral description)? Second, what is recommended to be done according to the IO in the context of digitalization in education (either with concrete or general recommendation strategies)? Third, what is considered the main driving force for the IO regarding the developments in education (general norms, international treaties, education-specific events, or external disruptive events)? In addition, we focus on which (collective) actors or social groups are considered as addressees of an IO's policy programs and which (collective) actors or social groups are named as responsible for implementing the policy recommendations to improve digitalization.

Given that we aim to trace the IOs' policy positions regarding the digitalization issue over time, for each five-year period we sampled 2–3 policy documents per IO, if available. The availability of IO documents on educational digitalization was, however,

Figure 3. Most frequent terms used by IO



unevenly distributed across time periods (very few documents until the late 2000s and several documents after 2015) and across IOs (see Figure 1). Because of this, in our sampling strategy we included almost all available IO documents from the 1990s and early 2000s and selected the documents from the 2010s according to their relevancy. Here, relevancy refers to the authorship of the documents. A policy document that is authored by the IO itself is preferred over a document that is authored by experts of the IO who provide an analysis, for example, but without giving recommendations. Furthermore, a document that exclusively deals with educational digitalization is preferred over a document with several topics, with digitalization being only one of them.

We applied a deductive–inductive approach to analyze the IO documents.² First, we extracted the information from the texts by deductively identifying and coding relevant segments according to our main categories (framing, recommendation, driving forces,

addressees, and providers). In the second step of the analysis, we summarized the information inductively by developing meta-categories for how the topics of educational digitalization were depicted by the IOs in individual documents. By condensing the data into overarching categories, we were able to compare and contrast the views of different types of IOs. In the following sections, we first analyze the two IOs with a global reach (OECD and UNESCO) and then discuss the results for the two regional IOs (AU and EU).

OECD: From Improving Digital Infrastructure to Improving Digital Skills. Compared to other IOs that are active in the area of educational digitalization, the OECD began to cover the issue relatively early. While the IO had already published extensively on the impact of new information technologies on economies and labor markets, the relevance of ICT for education only became a focus in the 1999 publication *Education Policy Analysis 1999* (OECD 1999). The initial approach of the OECD regarding digitalization in education was also closely tied to its PISA project. Since PISA aims to measure the skills of students and how well they can apply them, the OECD mainly addressed the use of ICT as a skill that can be acquired by students. Ultimately, the assessment of digital literacy even became a separate item in PISA 2009. In sum, it can be said that the OECD was one of the forerunners in the debate on ICT in education. Even before the digitalization of education became a ubiquitous topic due to the COVID-19 pandemic, the OECD was already working on regulating the use of ICT in education, pooling resources, and organizing events.³ Especially due to its wide reach through PISA and general policy advice in over 100 countries (Seitzer et al. 2023), we consider the OECD to be an IO with global reach.

As an IO with restrictive membership rules, the OECD focuses on the education policies of its member countries – all of which are developed industrialized states of the Global North. Substantial shifts can be highlighted in how educational digitalization was picked up by the OECD. For both analytical categories – framing and policy programs – the IO changed its approach in the late 1990s and adopted a more encompassing view on the topic going forward. While the focus was previously on ICT skill formation, the IO now also considers the importance of a holistic national strategy for educational digitalization. Accordingly, the OECD recurrently names national governments and policymakers, teachers, and educational institutions as relevant actors to develop and implement policy strategies. The group of addressees remained stable over time in that the OECD views teachers, educational institutions, and students (also from socioeconomically disadvantaged social groups) as the main targets for support.

The underlying issues of digitalization were framed both negatively (highlighting problems) and positively (referring to opportunities and accomplishments). Variations in time and topics can be identified. In the period between 1999 and 2005, the OECD often problematized existing access for using ICT in education. For example, the (unequal) access to digital infrastructure and the lack of skills when using ICT was highlighted. After 2005, the issue of unequal access (digital divide) persisted, but issues that are related to the use of ICT in education were increasingly criticized by the IO. Most importantly, the lack of skills of teachers, school management, and administration in applying ICT was seen as a major obstacle. Further, the OECD also referred to opportunities for new digital technologies for education systems early on, and identified the potential for reducing socioeconomic inequalities, raising educational attainment, and increasing financial efficiency. The IO generally praised the narrowing digital divide and the innovative educational approaches that were developed in some countries.

Lastly, in more recent documents (since 2017), the OECD acknowledged the opportunities of ICT at the classroom level (better diagnostics, online teaching, improved communication).

Overall, in its programmatic approach to educational digitalization, the OECD mainly relies on general recommendations. Some recommendations were repeatedly issued when the IO addressed potential improvements in educational digitalization. For example, the OECD always emphasized that national education policies should be tailored in accordance with new demands and urged policymakers to develop a holistic digitalization strategy in education. Furthermore, the OECD stressed that education systems should increase financial support to adapt teaching and learning according to newly emerged demands, or existing accountability and monitoring measures should be improved. Other topics were discussed only at particular times. At the beginning of the OECD's work on educational digitalization, the IO intensively focused on improving the administration of digital infrastructure and on supporting disadvantaged social groups. Later on, other topics gained prevalence: improving the skills of teachers in digital education and enhancing (school) management capacities regarding ICT. Hence, the OECD moved from more general topics in educational digitalization toward more practice-relevant issues regarding how digital education is delivered.

When it comes to the driving forces the OECD identified as relevant for influencing developments and imperatives for action, it mainly refers to events and developments external to the education system. Topics like accelerating technological progress (OECD 1999, 2005, 2014), the emergence of the so-called knowledge society, and post-industrial developments (OECD 2010) were named as the main drivers for challenging education policies. Recently, the COVID-19 pandemic was added to that list of external shocks that shape digitalization in education. In this context, the OECD was able to build on its existing expertise, further develop its approaches to ICT in education, and disseminate them to its member states. Furthermore, equality issues were considered important, particularly at the beginning of the OECD's turn toward educational digitalization (OECD 1999, 2001).

UNESCO: Providing Perspectives for the Global South. UNESCO is traditionally the global IO that is mandated to focus on education policy issues. Accordingly, educational digitalization is also part of the IO's portfolio; it first addressed the issue in 1997 and has published regularly on it since then. Although constituted as a global education IO with universal membership and worldwide reach, in the early 1980s UNESCO increasingly took into account the needs of developing countries (Mundy 1999). This led to an estrangement from countries of the Global North (Menashy and Manion 2016). Over a long period, its particular approach to education put UNESCO at odds with other global IOs – like the World Bank or the OECD – which view education from a different ideological standpoint that emphasizes its potential for generating human capital (Niemann 2022). The primary focus of UNESCO is also reflected in its approach to educational digitalization. Especially in the late 1990s and early 2000s, the IO focused on the potential of ICTs for the education systems of the Global South. It was assumed that various groups (students, teachers, adults, education institutions, and even firms) can benefit from intensifying the use of ICT in the education sector. The fundamental differences eased after the turn of the millennium, when UNESCO and the World Bank/OECD converged by incorporating the views of the others into their educational policy program. The OECD and World Bank increasingly acknowledged the impact educational progress can have on societal development and UNESCO

and its like-minded IO allies, such as the ILO, began to emphasize the economic relevancy in their education policy recommendations (Niemann 2022).

Throughout the entire discussion on educational digitalization, UNESCO emphasized the positive potential of ICT for the educational success of members of disadvantaged social groups. UNESCO anticipated that supporting disadvantaged populations (due to gender, income, or disability) is even more challenging for low-income countries of the Global South than it is for industrialized states in the Global North. Hence, ICT in education was seen as a viable opportunity to include more children in education and offer them better-tailored programs. This early position of UNESCO was re-emphasized during the COVID-19 pandemic, which multiplied the existing problems for disadvantaged social groups. Generally, the broad circle of addressees of UNESCO (notably in contrast to the other three IOs) reflects the view of the IO that educational digitalization is a matter that affects all layers of society. Like other IOs, UNESCO primarily holds national policymakers and governments responsible for improving digital education. In addition, the IO advocates that social partners, like unions or NGOs, should be included in the process of fostering ICT in education.

In its discourse on educational digitalization, UNESCO did not extensively refer to framing issues as a problem or opportunity that calls for political action. At the beginning of its activities regarding educational digitalization, the IO regularly refers to the lack of financial resources or inappropriate fiscal spending. Another problem frame that was referred to is the digital divide and inequality in access to ICT. This was prevalent between 1997 and 2005 and again in 2020. Not surprisingly, UNESCO highlighted the problems arising from the school shutdowns during the COVID-19 pandemic as a new challenge for education systems. Other IOs (especially the OECD) hailed the developments in educational digitalization as promising opportunities for dimensions of education like cost efficiency and reducing inequality. Only UNESCO constantly points out the potential of ICT to improve the delivery of education, especially by enabling new communication channels between students and teachers. Generally, it did not provide best practice examples or refer to accomplishments in educational digitalization.

However, UNESCO proposes several general solution strategies to enhance educational digitalization. Most of its recommendations span the entire period of the IO's activities in educational digitalization (1997–2022). The core recommendations address a better allocation of financial resources, improving access to ICT, adapting curricula according to new needs, and improving policy frameworks to enable digital education progress. A major issue UNESCO continuously stresses is that the expansion of cooperation of different types of actors is a necessary condition for improving educational digitalization. Since the lack of political, economic, and educational resources is a severe problem in many countries of the Global South, a unified effort of governments, international actors (like IOs and NGOs), and domestic stakeholders (social partners, private actors, and firms) is viewed as a central building block in forging effective improvements in educational digitalization.

For UNESCO, specific general norms were regarded as driving forces for its recommendations. Between 1997 and 2003, the IO stressed that education is a human right and that, in order to achieve the goals of education for all and lifelong learning, ICT in

education must be improved. Later, general norms – namely equality and inclusiveness – became central forces in demanding the expansion of digital education because, in the view of UNESCO, a society can become more equal and inclusive by ensuring access to education via ICT and adapted learning concepts. In addition, ever-increasing technological progress made adaptations to the learning environment essential. The same external pressure was again put on the education systems with the advent of the COVID-19 pandemic; the disruptive event required an adequate response to sustain the efficiency of the education systems.

AU: Regional Problems, Regional Focus. The AU is a latecomer in addressing educational digitalization, only becoming involved in the topic in 2017. However, since then the AU has comprehensively covered aspects of digitalization in education and, as a regional IO, it has focused on regional contexts. Accordingly, the identified problems and recommendations were almost always linked to Africa and its capacities and particular needs. In doing so, the AU extensively highlighted problems with educational digitalization without equally stressing the potential of ICT for education. The problem frame comprised issues of inequality in accessing ICT (digital divide), the lack of necessary (financial) resources, and missing skills in applying ICT in education. Also, COVID-19-related issues were increasingly viewed as problematic for African education systems. While schools were closed and teaching was to be moved to remote learning, the existing deficits in digital infrastructure and lack of access to ICT became a severe obstacle for most African states, according to the AU.

The AU's general recommendations were not so different from those of the Global North IOs. It recommended more (and purposive) financial investments in educational digitalization, emphasized the need for accessible digital devices and digital infrastructure for all, and called for improving the skills of teachers regarding ICT. However, the general recommendation strategies of the AU remained rather unspecific. In most of its recommendations, the IO did not directly address which social groups should particularly benefit from reforms, nor did it elaborate on who is responsible for delivering them. The AU also did not advocate for an encompassing strategy for educational digitalization, and its recommendations were linked to the idiosyncrasies of the African continent and its diverse community of states.

With the AU's broad initiatives in educational digitalization, the IO has developed multiple concrete recommendations. These programs focus on more detailed approaches to implementing ICT in education. They are directed toward the African continent and are also to be understood as best practice models for other African states. For example, the Near East and North African (NENA) program is about digital libraries, which is “a fully operational solution that can be scaled up across Africa” (African Union 2020).

Regarding the driving forces, the AU barely identifies specific developments as relevant for educational digitalization. However, the IO refers to overarching African programs (Continental Education Strategy for Africa, Digital Transformation Strategy for Africa) that also set stimuli for digitalization plans in the field of education. Since 2020, the COVID-19 pandemic has been cited as the most significant external event, severely affecting education systems and putting immense pressure on policymakers and educators to adapt teaching and learning strategies. COVID-19 was a game changer and pacemaker in developing strategies

for educational digitalization. However, in the course of COVID-19, the AU was more focused on bringing fundamental problems of digitization in education, such as lack of funding and insufficient access, to the forefront, whereas the other IOs also emphasized more specific aspects of the implementation of digitized teaching concepts.

EU: A Closed Shop for Members. Education policy is traditionally not part of the EU's core competencies because the IO lacks a clear mandate in this policy field, and its member states carefully safeguard their autonomy from the EU regarding educational matters (Martens and Balzer 2007). Nevertheless, the EU launched initiatives in education policy, primarily by focusing on vocational and higher education, which has gained considerable influence in the last two decades (Bieber 2016). Furthermore, educational digitalization has become an issue regularly addressed by the EU since 2001. It mainly aims to support students and teachers (and, more infrequently, educational institutions). In doing so, the EU almost exclusively holds national policymakers and governments accountable for improving educational digitalization. Since its recommendations are advanced and mostly exceed basic access to ICT, the EU's program in educational digitalization aims naturally at its member states and not much at developing countries of the Global South that could draw lessons from experiences within the EU.

The EU's policy on educational digitalization experienced a considerable boost during and after the pandemic. Although this most recent period was not captured in our data collection of EU documents, the general trends are clear: the EU has mobilized extensive resources to promote digitalization in education. As part of its NextGenerationEU recovery plan, the IO also aims to mitigate the impact of the COVID-19 pandemic by providing funding for investment in digital education.⁴ Furthermore, in 2023 the European Commission adopted a comprehensive program for digital skills and education, which encourages all member states to ensure universal access to inclusive and high-quality digital education, as well as training to overcome the digital divide.⁵

Generally, the EU framed digitalization in education more in terms of opportunities rather than problems. However, between 2001 and 2022, the IO referred to the lack of skill in applying ICT in education as challenging for the modernization and appropriate development of national education systems. Other problem frames occurred only sporadically in EU publications. Overall, the framing of educational digitalization as an opportunity was more diverse and prominent. The EU states that digitalization has the unique potential to improve educational processes. In this context, the EU emphasized that the appropriate application of ICT can advance learning techniques and online teaching methods. Furthermore, the EU highlighted steps that had already been introduced to further educational digitization and innovations in this area.

When it comes to policy recommendations regarding educational digitalization, the EU stresses throughout the period 2001–2022 that adapting teaching and learning techniques (2001–2020) and improving the ICT skills of teachers (2004–2022) is pivotal for a successful implementation of educational digitalization. More recently, since 2016, the EU has recommended introducing new policies and regulations to adapt national education systems to the new challenges of more digitalized education processes. The

EU also promoted enhanced cooperation of stakeholders in education via its Open Method of Coordination (Dale 2009). The comprehensive approach of general recommendations was, however, only marginally accompanied by concrete programs and initiatives: between 2001 and 2022, the EU gave examples of best practice initiatives only in the documents from 2004, 2012, and 2016.

The driving forces of the EU's policy recommendation were mostly the IO's own overarching programs (e.g. the Lisbon Summit of 2000 or the Commission's eLearning Action Plan). To a minor degree, external disruptive events also played a role in shaping the EU's positions on educational digitalization. In this context, the IO referred to the accelerating technological progress and, since 2020, to the negative effects of the COVID-19 pandemic. In calling for altering or introducing education policies, it is noteworthy that the EU did not refer to general norms and values.

Comparison of the Four IOs' Policies

Several differences between the four IOs can be highlighted (see Table 3). Notably, only UNESCO extensively refers to the advancement of disadvantaged social groups through digital education, while the other three IOs just sporadically address the potential benefits of ICT education for marginalized social groups. Both Global North IOs and the EU (and, to a lesser degree, the OECD) mentioned achievements in introducing ICT in educational contexts. They provide best practices from member states for (member) states. Only the OECD holds teachers and education institutions accountable for contributing to improving educational digitalization.

All four IOs offered multiple general strategies for improving educational digitalization with varying emphases. The OECD focused mainly on financial and administrative issues and on improving teachers' ICT skills. The two IOs with a focus on the Global North – the OECD and the EU – both recommended adapting policy regulations, collecting and analyzing data, and introducing modernized teaching and learning methods by also improving teachers' ICT skills. In contrast, the AU and UNESCO, both focusing on the Global South, aimed at the increase and appropriate allocation of financial resources and ensuring access to the digital infrastructure. Furthermore, UNESCO strongly advocated the adaptation of policy regulations/rules, as well as curricula to allow for more educational flexibility. UNESCO is the only IO in our case study sample that emphasizes enhancing cooperation between multiple (national and international) stakeholders in education.

However, similarities exist across all four IOs. When it comes to the question of which actors are responsible for improving educational digitalization, the four IOs direct their recommendations (and critiques) to policymakers and governments. For all four IOs, students (and teachers) were the main addressees that should benefit from improved education policies. With the exception of the AU, all IOs strongly underscored the positive potential of educational digitalization. In particular, the manifold possibilities for improving national education systems with ICT were highlighted constantly. It is also remarkable that the IOs are relatively consistent in their positions over time. Several issues that were featured in the early 2000s were still IOs' focal points in 2020.

Table 3. Comparison of the four IOs

	OECD	UNESCO	AU	EU
<i>Primary framing</i>	Opportunity: new teaching/learning techniques; reduce inequalities Problem: lack of access & ICT skills (of teachers)	Opportunity: ICT as chance for educational success of socioeconomically disadvantaged; increase inclusion; improve delivery of education Problem: inequality in access	Opportunity: <i>unspecific development potential for African states</i> Problem: digital divide, lack of (financial) resources, missing skills in applying ICT	Opportunity: new teaching/learning techniques Problem: lack of ICT skills
<i>Primary recommendations</i>	Develop a holistic digitalization policy strategy: tailor policies according to demands; increase financial support, admin processes, and teachers' ICT skills	Improve resource allocation, access to ICT, policy frameworks; adapt curriculum; enhance cooperation among stakeholders	Increase financial support and access to ICT; improve allocation of financial resources; provides best practices for how to implement ICT in education	Adapt learning techniques; increase teachers' ICT skills; enhance cooperation among stakeholders
<i>Primary drivers</i>	Advances in new technologies; advent of the knowledge society; COVID-19	Education as a human right; quest for equality & inclusiveness; advances in new technologies; COVID-19	Overarching education & digitalization programs in Africa; COVID-19	Own programs; advances in new technologies; COVID-19
<i>Primary actors</i>	Governments, teachers, and education institutions	Governments	<i>Not specified</i>	Governments
<i>General approach</i>	Advanced policies of its member countries which are developed industrialized states	All-inclusive approach with a special focus on the Global South	Linked to African continent with its diverse community of states	Advanced educational digitalization recommendations for its member states

Conclusion

In this article, we set out to explore how education IOs address the digitalization of education. We expected a global diffusion of the issue by IOs as suggested by sociological institutionalism and varieties in how IOs dealt with the issues according to institutional characteristics such as membership and scope of the IO. By doing so, we explored the extent to which IOs may contribute to tackling the “digital divide” between Global North and Global South countries and promote more even access to digital learning processes.

According to sociological institutionalism, we expect a world culture that will further digitalize education. Our quantitative overview of the documents across education IOs showed that digitalization of education is a widespread issue that is dealt with by a majority of education IOs across all regions in various ways. Interestingly, the digital divide was – contrary to our previous hypothesis approaching this project – a topic the IOs tackled to the extent that it would be visible in a quantitative text exploration. However, our analysis also showed that digitalization is a very broad and unfocused topic for IOs, including an interplay of issues like schooling and skills, access, rights, and regulations. There is also rather limited discussion on the benefits of digital learning for distance education. Interestingly, their focus is not on digitalization for schooling per se but includes a multitude of technical, business, and labor-market-related issues as well. It also showed that not one of the IOs had a single clear theme regarding digitalization, but all IOs discussed many of the themes, independent of their institutional set-up as global or regional IO. Unsurprisingly, the COVID-19 pandemic caused an increase in document frequency on the digitalization of education by some IOs; however, not all of the organizations have used this opportunity to promote the digitalization of education for distance learning. The qualitative results showed that all four examined IOs – the AU, the EU, the OECD, and UNESCO – even provide recommendations for improving the digitalization of education.

The qualitative analysis also sheds light on the differences between the types of IOs depending on their institutional design. As expected, the membership and scope of an IO explain variations between them. The IOs with a large and (potentially) open membership tend to provide one solution for all to advance the digitalization of education, while the regional organization supports specific solutions tailored closely to their target population. The AU, for example, supported multiple recommendations for improving the extent of digitalization in line with the diversity of the continent, while the OECD did not differentiate between member states. IOs with a focus on supporting the Global South take the specific conditions far more into account than those of the Global North, particularly financial and technical challenges. For example, while UNESCO emphasizes the need to support digitalization as an issue of equality and right to education, the EU concentrates on improving the technical conditions. However, some general issues remain similar between these IOs: the focus on improving learning opportunities through digitalization, particularly regarding schooling and improving teachers’ skills. Ultimately, the COVID-19 pandemic has also resulted in IOs once again taking up digitalization in the education sector. Even if different IOs have formulated different priorities in this context, the pandemic has helped to put digitalization more firmly on the political agenda and provide new impetus. However, the overall response was much more restrained than expected.

Although we initially approached the discussion expecting the discourse and recommendations to revolve around the digital divide, the IOs we examined did not prioritize this perspective. While each IO offered policy solutions tailored to specific issues, none centrally focused on dissecting the digital divide and its nuanced manifestations. Instead, they tackled the issue indirectly, offering solutions within their respective spheres without directly addressing or bridging it. However, the intricate nature of the digital divide poses challenges beyond their immediate scope, prompting them to concentrate solely on issues within their realm of influence. These organizations strategically focus on areas where they can enact meaningful change and offer tangible solutions.

Overall – and consistent with recent findings on IO populations in different policy fields (Niemann et al. 2023) – our analysis supports the trend toward regionalization of IOs, and an increasing number of IOs with a regional focus are engaging in various policy areas, including education. Our findings for IO discourses on digitalization in education reflect these recent developments and the different policy positions of the IOs in our sample illustrate general patterns in the field of multilateral cooperation.

Notes

1. We did not explore the overall document output in education for each IO but rather focused on the topic at hand.
2. In our qualitative content analysis, we have not covered all IO documents in their entirety, but instead focused on summarizing sections (e.g. executive summaries, introductions, and conclusions) and on sections that explicitly address educational digitalization.
3. For example, in 2015 the OECD organized the Global Education Industry Summit to discuss innovations in educational digitalization (OECD 2016).
4. https://next-generation-eu.europa.eu/index_en, accessed April 10, 2024.
5. <https://eufordigital.eu/european-commission-calls-for-boost-in-digital-education-and-skills/>, accessed April 10, 2024.
6. While in most other policy fields the supranational EU is a special case, in education policy the IO has no prescriptive authority and its governance capacities are identical to those of other IOs. Hence, comparability with the other IOs is ensured.

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