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## EDITED BY

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Manjula Srinivas,  
University of Mumbai, India

## \*CORRESPONDENCE

Lars Almén  
✉ lars.almen@ju.se

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# Digital tools and social-ecological sustainability. Going beyond mainstream ways of understanding the roles of tools in contemporary eduscapes

Lars Almén\* and Sangeeta Bagga-Gupta

School of Education and Communication, Jönköping University, Jönköping, Sweden

All education in Sweden, or the Swedish *eduscape*, is permeated by discourses of compensation and inclusion, conceptualized in this study as a *one-school-for-all* ethos or perspective. This ethos contributes to a social-ecological framing, wherein the intentions are a society where everyone can participate as active members. This study scrutinizes the governmental strategy of 2017 to digitalize the Swedish educational system based on a one-school-for-all perspective. The study is framed by SWaSP (Second Wave of Southern Perspective) theoretical ideas, with a special focus on positionings, languaging, timespaces, and epistemological-methodological dimensions, including ethics based on the entangled tenets of sociocultural, integrationist, and southern perspectives. Furthermore, this study is anchored in three research projects and one societal developmental project. Materials - e.g., video recordings, audio recordings, photos, artifacts, fieldnotes - from these projects have been generated through (n)ethnographic methods from different institutions in the Swedish educational landscape i.e., eduscape. These span across compulsory schools to Swedish for Immigrants (SFI), within Municipal Adult Education. Three themes have emerged in the multi-scalar data analysis from across settings: (i) intended inclusion, (ii) unintended exclusion, and (iii) intended exclusion. The first theme highlights how digital tools (DTs) create inclusion for students with special needs, or those who are new to the named-language Swedish, in the classroom community, thus contributing to social-ecological sustainability. The second theme illustrates how DTs intended for inclusion in classroom practices morph into tools of exclusion for individuals in mainstream classrooms. The third theme highlights how students in the Swedish eduscape are intentionally excluded from mainstream classrooms. We argue that a social-ecological sustainable stance troubles the division of eduscapes into "mainstream" and "other" settings in contemporary societies, calling for the inclusion of *all* students irrespective of their positionalities. Our findings highlight that multimodal use of DTs potentially can facilitate inclusion, by providing tools where individual students can participate in and contribute to teaching and learning—what we frame as a *third position* of classroom organization.

## KEYWORDS

social-ecological sustainability, SWaSP, one-school-for-all, positionings, digitalization, Sweden, school education, diversity

## 1. Introduction

Schools are the largest institutions in contemporary democratic societies. Not only do they constitute arenas where *all* children and young people are tasked to participate in activities created by society at large but they also constitute one of the largest places of employment. In addition, many professionals and industries such as food supply chains, caring sciences, publishing industries, and increasingly digital media professionals and firms have a vested interest in school institutions in different ways. Schools are mandated to cover all children and young people below a specific age (this varies across nation-states but is usually between 16 and 20 years of age). In addition to offering education to young people in their constituencies, municipalities in Sweden are mandated to also provide specific education free of cost to adult citizens. In a society such as contemporary Sweden, adults who have not completed their compulsory (grades K–9) or upper secondary (grades 10–12)<sup>1</sup> school education can complement this within adult education streams [this takes place either within Municipal Adult Education (MAE) or what is called folk/people's high schools,<sup>2</sup> a school form where different providers—both public and commercial organizations, religious communions, foundations, etc.—offer adult education].<sup>3</sup> While some individuals do not complete compulsory education for a variety of reasons, others like foreigners, migrants, and refugees may need to upgrade previous qualifications in a nation-state like Sweden or join MAE or folk high schools to learn the national named-language Swedish.

Swedish for Immigrants (SFI) is one of the largest adult educational forms in Sweden. Anyone who is at least 16 years old, has gaps in their basic school education, and has moved to and lives in Sweden has the right to study SFI (SFS nr: 2010:800). Municipalities are tasked to make SFI education available to adults who need it. In other words, this education, like all compulsory and upper secondary education is publicly funded. SFI can also be provided by other social actors such as firms and independent schools that are reimbursed for their services by the municipalities. In a survey conducted by the Ministry of Education (Government

Offices of Sweden, 2020), 66% of the municipalities responded that they offered SFI themselves, and one-third responded that they either cooperated with other organizations or delegated SFI completely to other institutions.

This brief overview suggests that the educational landscape, i.e., *eduscape*, in contemporary times in a societal context like Sweden encompasses a wide range of ages—from 6 years in kindergarten to adults with no adult age limit in principle in MAEs or folk high schools. Furthermore, while the digitalization of learning and instruction during the last couple of decades has morphed in the lives of children and adults in schools, it has also created new industries and expertise areas that bear upon the institution of schooling.

In this study, we attempt to go beyond age-related dimensions of education from a one-school-for-all ethos that Swedish school provision rests upon. This study aims to illuminate how contemporary schooling plays out and the nature of agendas that can be identified in relation to its one-school-for-all framework. Here, we particularly focus on how digitalization initiatives in the Swedish eduscape are framed in policies and how they get operationalized in institutional setups across the later stages of compulsory education and up to adult education within MAEs. How, we ask, do contemporary educational institutions deal with the diversity of young people and adult students, i.e., individuals who are students in schools, and what types of diverse teacher populations do students meet in these contemporary settings. To enable this, we draw traction from the Second Wave of Southern Perspectives framing (SWaSP) (see Section Analytical guiding principles. Meeting complexity through SWaSP). We present methodological issues, including data that are drawn from multiple projects (see Section On learning about contemporary complexities in educational contexts. A note on methods) at the CCD research environment at Jönköping University, Sweden, of which we are members. The salient findings of this study are discussed in the final section. Section A diversifying one-school-for-all education in Sweden? further explicates issues related to the Swedish school system, as well as key points from existing research and governmental overviews.

## 2. A diversifying one-school-for-all education in Sweden?

Swedish education is reported to build on considerations of individual needs in teaching based on every student's prerequisite, an ethos that permeates *all* educational practices, including educational policy-making, across *all* school levels covering the youngest children in preschool settings to adult students in MAE. The inclusion of *all* students in the Swedish context gets highlighted in terms of compensation for various background criteria (for instance, not being white Swedes,<sup>4</sup> being marked

1 All children in Sweden are required to attend 1 + 9 years in compulsory schools: the first preschool year (Kindergarten = K) and 9 years in primary-middle-secondary school. Students in special schools for the deaf and hard-of-hearing attend compulsory school for 1 + 10 years. Most children start preschool class when they are 6 years old, and compulsory school when they are 7. Upper secondary (or high) school spans 3 years (hearing impaired young people attend 4 years) and is optional, but almost all young people attend upper secondary schools as well.

2 Original Swedish: Folkhögskola.

3 Swedish MAE is extensive, with 400,000 students reported to have participated during 2020. Adult students can, for example, supplement courses equivalent to lower and upper secondary school, get vocational training, and validate previous education (<https://utbildningsguiden.skolverket.se/languages/english-engelska/komvux>) Educational courses called Swedish for Immigrants (SFI) are an important part of MAE. In total, 137,000 students were enrolled in SFI courses during 2020 [The Swedish National Agency for Education, 2021; "Elevor och studieresultat i kommunal vuxenutbildning 2020" (Eng: Students and Study Results in Municipal Adult Education)].

4 This builds on more recent discussions regarding color-blindness in Swedish spaces, including educational settings. While compensatory efforts are not in place for adopted children in school settings, emerging research suggests that these students too require support of various kinds, not least because their appearance differs from white majority Swedes features.

by disabilities, etc.). This inclusive perspective is conceptualized as *one-school-for-all* in the present study. The Swedish National Agency for Education (2014) summarizes this ethos in terms of a compensatory agenda:

the school has a compensatory task. The education should take into consideration all students' different needs, where an ambition should be to balance differences in their prerequisites. This means organizing activities at the individual, group, and school levels to give students opportunities to develop as much as possible in line with the goals of the education.<sup>5</sup>

The Swedish National Agency for Education (2014) highlights that this compensatory and individually adapted education is mandatory for *all* education—compulsory school, upper secondary education, and MAE. In line with the above, the Swedish school law (SFS nr: 2010:800) also stipulates that the endeavor should be to compensate for differences in children's and students' prerequisites so that they benefit from their education.<sup>6</sup> Furthermore, the school law stipulates that the “point of departure [in MAE] is that the education of an individual student is dependent on the student's needs and prerequisites”<sup>7</sup> (SFS nr: 2010:800). Curricula for all school forms—compulsory school (The Swedish National Agency for Education, 2018), upper secondary school (The Swedish National Agency for Education, 2013), and MAE (The Swedish National Agency for Education, 2022b)—are premised on the fact that “[t]eaching should be adapted to each student's circumstances and needs”.<sup>8</sup> Teachers in Sweden are thus obliged to take pedagogical measures to take into consideration all their students' individual needs. For students in need of special support, teachers are compelled to make special adaptations, give special support, and document the measures they have taken for individual students (The Swedish National Agency for Education, 2014; SFS nr: 2010:800).

This elaborate inclusive and compensatory perspective is supposed to permeate all pedagogical (inter)action, including the choice of tools used in education. The one-school-for-all discourse thus frames tools used in school as tools for mediating adaptation and special support; hence, Information and Communication Technology (ICT) is both considered a tool for inclusion and a compensatory tool for students in need of special support at all educational levels (The Swedish National Agency for Education, 2017, 2020, 2022a), and in various classroom activities,

such as consuming (Borgestig et al., 2013; Nordström et al., 2019) and producing (Lidström and Hemmingsson, 2014) text. However, due to a high degree of school and teacher autonomy, access to and usage of Digital Tools (DTs) is reported to differ for both students and teachers, sometimes within the same school (The Government of Sweden, 2017).

This discrepancy between the one-school-for-all ethos across the educational landscape, and an uneven or weak digitalization in place in schools, led to the establishment of a national regulation where the political ambition was to digitalize the entire school system from an equity perspective (The Government of Sweden, 2015, 2017). Launched for the entire educational system in 2017, the digitalization strategy had the intent to also increase the nation-state's prospects of becoming a world leader in different spheres (Government Offices of Sweden, 2012). Its three primary focus areas included digital competence for everyone, enabling good access to and deployment of digital tools, and supporting research and evaluation of the outcomes of the digitalization initiative (The Government of Sweden, 2017). Two foci areas of the digitalization strategy related to the inclusive ambitions of the one-school-for-all discourse are as follows: digital competence for all in the school system, and equally good access to and usage of digital tools for all in the school system. The implementation of this digitalization strategy has led to the teaching of computer knowledge in many compulsory schools, and the provision of DTs to students in nearly all secondary schools, with the result that both the computer per student ratio (The Swedish National Agency for Education, 2022a) and digitalization strategies have increased across the Swedish educational landscape (The Swedish National Agency for Education, 2019).

Against this background, it is interesting to note that sparse, if any, didactic research exists in relation to digitalization initiatives for adult learners of the subject labeled Swedish as a second language (The Swedish Schools Inspectorate, 2018), or for that matter the commercialization of Swedish adult education (Andersson and Muhrman, 2021). Previous studies and reports also suggest that teachers working in SFI education have a low certification rate. This means that they do not have a formal university-level qualification for their work. For instance, during the school year 2020/2021, only half of the SFI teachers were certified (Government Offices of Sweden, 2020; The Swedish National Agency for Education, 2022c). During the same period, about three-quarters of teachers working in regular adult education were certified (The Swedish National Agency for Education, 2022c). In addition, while the MAE student demographics are highly diverse (within SFI education, it is homogenous given that it is *de facto* made up of immigrant and refugee students), the teacher demographic profile is also homogenous—it is primarily white.

The tensions between the intentions of the one-school-for-all ethos in the Swedish educational provision, including the complexities that arise through the digitalization initiatives of 2017 on the one hand, and the different demographics of students, in relation to teachers on the other hand, raise issues related to democracy and social justice of a magnitude that calls for illuminating the complexities of contemporary education itself. Furthermore, these issues relate to social and ecological dimensions of sustainability that need redress from multiple theoretical and methodological lenses. In the following two sections, we present

5 Original: “skolan har ett kompensatoriskt uppdrag. Utbildningen ska ta hänsyn till alla elevers olika behov, där en strävan ska vara att uppväga skillnader i deras förutsättningar. Detta innebär att organisera verksamheten på individ-, grupp- och skolnivå så att eleverna får förutsättningar att utvecklas så långt som möjligt enligt utbildningens mål.” (All translations, unless mentioned otherwise, have been done by us).

6 Original: “En strävan ska vara att uppväga skillnader i barnens och elevernas förutsättningar att tillgodogöra sig utbildningen.”

7 Original: “Utgångspunkten för utbildningen av en enskild elev [i den kommunala vuxenutbildningen] ska vara elevens behov och förutsättningar.”

8 The quotation is from the English version of the curriculum for upper secondary school (p. 4). However, almost identical quotations can be found in the curricula for compulsory school and MAE.

the analytical apertures and methodological considerations we have drawn upon to address the aims of the present study. To re-iterate, our intentions relate to addressing the complexities, including the digital-analog entanglements of contemporary eduscapes in a democratic societal context to illuminate how schooling plays out and what type of agendas can be identified within a one-school-for-all framework.

### 3. Analytical guiding principles. Meeting complexity through SWaSP

The comprehensive and multi-scalar societal phenomena of institutional education that have been outlined so far are more aptly analyzed through a *multilayered* theoretical-methodological framing, rather than with the lens of one theory or one method. This section briefly presents the theoretical points of departure that guide our analysis. We use two broad *clusters* of theoretical ideas as points of departure that can be discussed within a *Second Wave of Southern Perspectives*, SWaSP framing,<sup>9</sup> which are as follows:

- a sociocultural perspective that is comprehensive in itself and that shares key ideas with other similar framings on communication and learning (such as Sadharanikaran, Ubuntu, Integrationism, etc.) constitutes one cluster;
- the second cluster focuses on issues of power and marginalization processes more centrally and that is variously discussed in terms of southern thinking, postcolonial and decolonial theories in the scholarship.

Five overlapping themes are central in a SWaSP framing. Issues related to *communication* or *linguaging* constitute the first theme. This builds importantly on the key idea that linguaging is a fundamental dimension of social action and involves peoples' interactions with others, including with non-humans and tools within situated and distributed practices. Scholars linguaging too is key from a SWaSP framing. Our analysis builds specifically on this theme (which also shares presuppositions related to the *epistemology-methodology* theme—see below). Issues of *positionality*—the scholars (here us) and those who are focused upon (i.e., the subjects' scholars are interested in)—is a second key theme. Positionality issues transcend understandings related to nation-state belonging or other essentialist characteristics that relate to identity. This constitutes the dynamic “loci of enunciation” of scholars (Mignolo, 2012). A SWaSP framing includes an interest in the positionalities of those who are focused on, in terms of non-essentialist *doings*. The issue of *ethics* constitutes the third theme that is central to a SWaSP framing. Ethics goes beyond issues of institutionally sanctioned ethical work. Subsuming it, it calls attention to the problematics of the

nature of epistemological thinking that in mainstream scholarship is universalizing and hegemonizing. *Timespaces* constitute the fourth theme. This theme highlights the centrality of both the historical trajectories of different phenomena under scrutiny as well as the relevance of all spaces with regard to colonial and marginalizing influences (irrespective of the coloniality of any given territory). The final theme relates to the entanglements of epistemological-methodological tenets. This upfronts the need to go beyond universalizing science and opening for a curiosity-driven multiversality of knowledge. This explicitly challenges the universalizing hegemonies of mainstream sciences. While all five themes are relevant to our analysis work, we will upfront dimensions of linguaging, timespaces, and epistemological-methodological dimensions as particularly significant here.

With a point of departure in the above-mentioned five themes, SWaSP also has salience to an ongoing epistemological shift in policy studies (See Bacchi, 2009; Bonacina-Pugh, 2012). This shift can be related to the entangled nature of policy *discourses* on the one hand and policy *practices* on the other hand (see Section A diversifying one-school-for-all education in Sweden?). Thus, for instance, Swedish schools at all levels include a compensatory discourse, that may not always be attended to in practiced policy. This entangled nature of decrees and social practices is embedded within the theorizing in a SWaSP framing, where the communicative, i.e., the interactional nature of human relations to one another, to tools and the environment, is key. Thus, an overarching interest in this study relates to issues that emerge when a one-school-for-all ethos is implemented in the nitty-gritty of everyday social life in institutions. This dichotomy between policy and practice is conceptualized by Bonacina-Pugh (2012) in terms of *declared* policies, *perceived* policies, and *practiced* policies. We have in recent work re-conceptualized practiced policies of inclusion and participation in terms of *policies (of equity and language) AS participation*, i.e., *pASpa* (Bagga-Gupta, 2022, see also Bagga-Gupta, 2023). What Bonacina-Pugh (2012) calls declared and perceived policies are conceptualized as *promises (of equity and language) IN policy* (henceforth *prINp*). Furthermore, and in line with *pASpa* and *prINp*, we critically question what problems declared policies are supposed to fix, conceptualized in Bacchi (2009) vocabulary as “*What's the Problem Represented to be*” (WPR).

The inclusion-in-practice expressed in the one-school-for-all ethos, and as conceptualized in *pASpa*, does not necessarily imply inclusion-on-the-same-conditions, or even inclusion-in-the-same-spaces. Students in need of special support are frequently intentionally segregated *inside* mainstream classroom spaces. From a SWaSP framing, this constitutes the first *position* of an educational organization (Bagga-Gupta, 2017, 2020). Here, students in need of special support participate in classroom activities together with mainstream students, with the enablement of compensatory tools. However, under certain circumstances, students in need of special support are segregated from mainstream students and classroom spaces. This goes back to the idea—or, from a WPR framing, the problem that needs to be “fixed”—that differences in educational requirements between mainstream students and students in need of special support necessitate a different organization of spaces; such strategies can be seen as a *second position* of an educational organization (Bagga-Gupta, 2020). However, a *third position* (Bagga-Gupta, 2020) of how

<sup>9</sup> SWaSP builds on an (on-going) first wave (Bagga-Gupta and Kamei, 2022) from which it differs in terms of its five primary themes, as briefly explicated in this section. See Bagga-Gupta and Carneiro (2021), Bagga-Gupta and Messina Dahlberg (2021), Bagga-Gupta (2022, 2023a,b,c), Bagga-Gupta and Kamei (2022); see also Bagga-Gupta (2023) in this special issue.



education can be organized takes as a point of departure the diverse needs of *all* students and the need for *all* members in educational settings to adapt to *all* types of needs. Focusing the languaging across everyday practices, i.e., *pASpa*, including the languaging in declared (or perceived) policies, i.e., *prINp*, opens up for understanding members' participation in institutional settings through a third position that transcends ideologies of integration/inclusion (position 1) and segregation (position 2).

The fundamental demarcations between “mainstream” students, and “students in need of special support” in the first and second positions of educational organizational stances become dissolved in a third position. Students are not labeled with ableist vocabularies, though their named-language usage, through categorizations of race, ethnicity, class, and other traditional identity markers; instead, they are viewed in terms of languagers or *participants-in-interaction* in educational activities. It is their mundane participant positions—always transient, rather than essentialist—that can be understood as providing them with fleeting identity positions. It is in this manner that fleeting positionalities can offer more nuanced ways of going beyond the hegemonic labeling ethos of mainstream educational sciences wherein people are reduced to a mono-dimensional framing forever: a named-identity 1 not only reduces the complexity of being human to just that identity but also becomes demarcated from named-identity 2, which is seen as being different from named-identity 3, and so on.

From the above annotation of hegemonic labeling practices, it follows that the segregation of students in and from the mainstream classroom is formally motivated by declared policies based on *named-ethnicity/race*, *named-functionality*, *named-first language*, etc. This in turn is based on a *mono- or uni-versalizing view* of ethnicity/race, functionality, language, etc. The mainstream Swedish school system is based on the usage of such mono- or universalizing framings (Bagga-Gupta, 2018). However, a broader perspective on being human, i.e., what (Ingold, 2015, 2017) calls *humaning*, and the very complexities of being human, calls for a comprehensive perspective on human communication and learning, where the concept of languaging, or *ways-of-being-with-words* (Bagga-Gupta, 2014), is significant for illuminating the entanglements of texts, accounts, and practices. This means that *prINp* and *pASpa* are dynamically entangled, rather than being in binary opposition.

Our positionality as scholars can be presented through our engagement in multi-scalar ethnographic studies where we share a focus on multiple classroom practices—temporally, spatially, and socially. Another common research interest lies in issues of digitalization of education as a mediator for processes of inclusion, exclusion, and marginalization. Lars Almén's ethnographical studies are mainly conducted in lower secondary school settings. These studies, however, are enriched by his position as a practicing upper secondary school and MAE teacher. Furthermore, Almén is engaged at a comprehensive level at a small Swedish municipality where he is employed, and in this engagement, meets students and staff from across all educational levels. Sangeeta Bagga-Gupta has been engaged in the explorations of issues related to communication, culture, diversity, and learning or socialization across physical and digital spaces across settings framed as the north and south since the late 1980's. In addition to positioning

herself as a perpetual migrant across physical and digital spaces in her personal and professional life, she works multilingually and multimodally. Her multidisciplinary interests draw upon multi-scalar data and socioculturally framed decolonial southern thinking. She lives and works in Sweden as well as in other spaces on the planet.

## 4. On learning about contemporary complexities in educational contexts. A note on methods

This study is anchored in three research projects and one developmental project.<sup>10</sup> Research conducted at CCD has a key focus on digitalization issues across the scales of nation-states, policies, and practices inside and outside institutional settings. This includes (but is not limited to) a focus on Swedish eduscapes from the perspective of inclusion and exclusion. Issues related to social-ecological sustainability lie at the heart of all four projects from which data are drawn, not least since the one-school-for-all discourse positions the Swedish compulsory, upper secondary, and adult education systems as resting on values of inclusion and compensation.

While our analysis transcends specific datasets, we draw more specifically from some datasets from the four projects. For instance, interviews with grade 8 lower secondary students, SFI teachers within MAE, and data from 2 years of fieldwork at a lower secondary school across grades 7 and 8 are drawn from the DIP project. Project CIC juxtaposes issues of multilingualism, diversity, identity, and marginalization processes inside and outside educational settings. In the context of this study, data pertaining to SFI education are anchored within projects DIP (ongoing) and CIC (concluded). The long-term goal of project SLoT was to contribute to understandings of diversity in various societal settings, including education. Of interest for the present study is the focus in project SLoT on a third position, especially on language education.

With a point of departure in (n)ethnography, data in the projects DIP, CIC, and SLoT build on recorded audio and video material, photographs, classroom material, fieldnotes, policy documents, webpages, and online material. DoIT is a cross-sectional think-tank that aims to bridge the cultural sector with other societal sectors such as research, education, civil societal efforts, etc. Rich data material has been generated across the Swedish eduscape. Framed through the first phase of project DIP,<sup>11</sup>

<sup>10</sup> These include Digitalization Initiatives and Practice (DIP; [www.ju.se/ccd/dip](http://www.ju.se/ccd/dip)), Categorization and Communication-2 (CIC; [www.ju.se/ccd/cic](http://www.ju.se/ccd/cic)), and SLoT ([www.ju.se/ccd/slot](http://www.ju.se/ccd/slot)) which focus on the following three settings: primary, lower secondary education, and SFI education. We also draw upon our experiences from the societal developmental project DoT and the think-tank that evolved from it, DoIT: [www.ju.se/ccd/doit](http://www.ju.se/ccd/doit). Of interest for our study here is the participation of NGO's in DoIT activities, whereby refugees who do not know the societal majority language participate.

<sup>11</sup> For a comprehensive account of the methodological framing in project DIP until 2021, see Almén (2021).

where 23 extensive interviews (11 female and 12 male), were conducted with grade 8 secondary students in three different schools, in 2016 during the first phase of project DIP (see text footnote 11). These were augmented with eight pilot interviews (four female and four male) conducted in 2015 in two other schools. All interviews were transcribed by the first author and engaged with by both authors in separate and individual data sessions. Furthermore, participant observations were conducted in a secondary class in one of the five project schools. Here, video documentation was generated across two school years between 2017 and 2019. In the second phase of project DIP, 7 SFI teachers at an SFI school were group interviewed in 2022. We engaged with these interviews and the partly transcribed materials that were audio recorded. The CIC data—consisting of audio recordings and policy materials pertaining to SFI—were engaged with by the second author first a decade ago and revisited in preparation for the present study. The SLoT data materials engaged with were generated during a pilot study in the primary grades of two schools in a rural part of middle Sweden. These consist of participant observations, field notes, video recordings, materials used in classrooms, school websites, and conversations with some teachers. These materials have been engaged with by the second author. The DoIT materials consist of post-meeting notes created by the second author. These notes focus primarily on what may be considered rich points in relation to how adults who are positioned as refugees, migrants, and those with functional variations engage with technologies and digital tools.

The multi-scalar nature of materials generated in the projects is engaged with to transcend issues of *projectivism*, wherein the focus tends to be on one specific institutional setting and one named-identity at a time. Data of interest for the present study from all four projects include both primary policy data, audio and video data, and the mundane nature of students' and adults' social practices inside and outside educational settings. Regardless of the nature of a specific project, all participants have been informed about the nature of our research interests and positionalities as scholars interested in issues of communication, culture, and diversity. Participants have provided consent, and for students up to the age of 15 years, their legal guardians have also been informed about the nature of fieldwork in the specific projects. Following the ethical principles of the Swedish Research Council, participants in the projects were informed of our research aims, how data materials would be handled, and participants rights to withdraw at any stage of the research process without being obliged to present any clarifications.

## 5. Contemporary digital-analog eduscapes. Tensions of inclusion-exclusion

With a point of departure in the one-school-for-all ethos described in Section A diversifying one-school-for-all education in Sweden?, we have focused on one specific initiative, the governmental digitalization strategy of 2017, and how this declared policy is accounted for and plays out in a range of digital-analog eduscapes. Hereafter, we thematically present

### Vignette 1 Advantages of DTs. Students in need of special support.

It is spring 2016, and we are engaged in a conversation with a student who the school has identified as needing special support. The student has been a bit reserved and now brightens and exclaims:

[Student] Yes, I have the best program I have found, it is... Do you know what *Inläsningstjänst*<sup>12</sup> is? [Researcher] Yes, right. [Student] I think it is really great! [Researcher] Yes, in what way? [Student] I don't have to read. I don't have to ask my parents to read texts for me. I can sit in my room and listen...<sup>13</sup>

Another student in another setting has problems keeping pace with what the teacher writes on the whiteboard. This student has also been identified by the school as in need of special support. They explain to us how easy it is to take a picture of the whiteboard, and hence be able to concentrate on the content instead of the problematic writing procedure.

the results of our mobile (n)ethnographic gaze across different settings, at MAE SFI and lower secondary education. Three themes have emerged in the analysis of our multi-scalar data: intended inclusion (5.1), unintended exclusion (5.2), and intended exclusion (5.3). In the final sub-section, we take up some critical reflections (5.4).

### 5.1. Intended inclusion. One-school-for-all

Our ethnographic timespace explorations in Swedish eduscapes preceded the digitalization strategy enactment.<sup>14</sup> In contrast to the analysis of previous and newer materials from project DIP, our re-visiting and analysis of multi-scalar data from project CIC indicate that DTs were not a priority in eduscapes earlier on in the 21st century. Analog tools were the primary resources that teachers and students used. A WPR framing indicates that the rationale for DT usage previously was to alleviate problems associated with disabilities like dyslexia. This lies in line with the inclusive discourses regarding a one-school-for-all ethos, and highlights how the one-school-for-all discourse is entwined with an ambition of social sustainability—students become an active part of societal life, irrespective of possible limitations. This can be illustrated through the case of students identified as in need of special support we meet in [Vignette 1](#): students who take advantage of camera features on their smartphones to photograph the whiteboard in lieu of time-consuming taking of notes, or who experience problems with decoding texts and instead have the texts read out aloud through text-to-speech features ([Vignette 1](#); [Figure 1](#)).

<sup>12</sup> Inläsningstjänst (literally Reading Service) is a commercial text-to-speech service used by many Swedish educational providers.

<sup>13</sup> In original: "[Elev] Ja, jag har det bästa programmet som jag typ fått fram, det är... Du vet vad Inläsningstjänst är? [Intervjuare] Ja, just det. [Elev] Det tycker jag är jättebra. [Jag] Ja, på vilket sätt? [Elev] Att jag slipper läsa. Jag slipper be mina föräldrar kan läsa det för mig. Kan jag sitta på mitt rum och lyssna på..."

<sup>14</sup> We draw traction from previous analysis in both projects DIP and CIC for a more comprehensive understanding of the timeframe to draw a wider arc for our present analysis (see analysis in [Rosén and Bagga-Gupta, 2013](#), [2015](#); [Almén, 2021](#)).

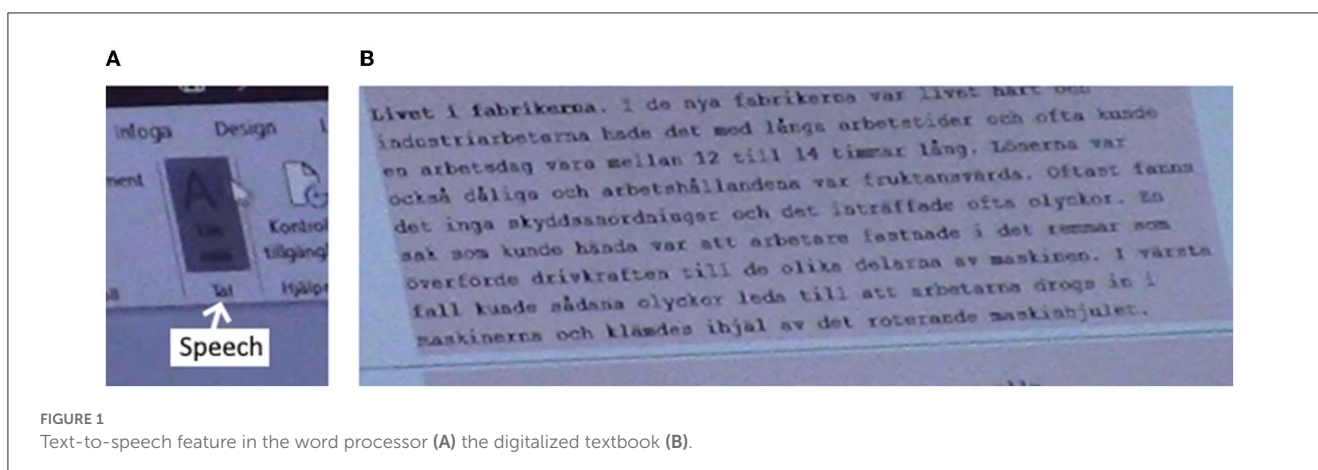


FIGURE 1  
Text-to-speech feature in the word processor (A) the digitalized textbook (B).

A student praises the text-to-speech tool and highlights its compensatory features (Vignette 1). It is, however, not only compulsory for upper secondary school students who take advantage of this tool but SFI teachers also highlight text-to-speech-enabled tools as one of the most useful DTs in their everyday classroom work. They highlight that this provides SFI students with the opportunity to listen to Swedish texts and that students can simultaneously follow texts in their textbooks visually, tracing words and sentences tangibly with their fingers. Another advantage of the text-to-speech tool is that SFI students can use it on their mobile phones. The mobile phone is the preferred DT by many SFI students. Furthermore, it is often the only DT that SFI students have private access to and previous experience of. Our experiences from DoIT reinforce this issue: adult refugees who have lived in Sweden for brief periods regularly use their smartphones to check up on individual words across different named-languages and to translate between Swedish and other languages that they are familiar with. This is interesting and contrasts with how DTs are primarily deployed in eduscapes. Given that DoIT is a meeting space, not an explicit learning and instructional context for minoritized individuals, participants' use of DTs indicates the valuable potential inherent in them for personal ends. We have also experienced adult refugees and their mentors navigating various social media platforms (such as Facebook and YouTube) through participants' smartphones.

A text-to-speech tool enables taking advantage of the *multimodal* possibilities of DTs. Students *read* what is available inside textbooks, *listen* to the text, and *tactilely* follow the text with their fingers. In Vignette 2, we meet a second example of multimodal tools. All students use mixed modalities in a laboratory setup, and all students have access to textbooks that are in focus during the lesson. However, students who need, or want, the theoretical framing explained in an alternative manner are at liberty to use their laptops too; through this DT, they watch physics explained via animated movies (Vignette 1; Figure 2). Animated physics resources, thus, work similarly to the YouTube resources SFI teachers discuss (Vignette 2). The main difference between the two examples is that the SFI students have identified YouTube lessons on their own, and voluntarily. Nevertheless, the multimodal resources are examples of how the declared ethos of a one-school-for-all gets transformed into

#### Vignette 2 Multimodal resources in physics lessons.

A grade 8 class is engaged in a physics laboratory experiment. The theme is prisms and light refraction. The laboratory equipment consists of both analog and digital tools. The students follow a textbook where basic theories are described. However, as a compliment, some students watch animated movies on their laptops. These movies describe the light refraction phenomena.

inclusive classroom practices, and how pASpa is synchronized with prINp.

Inclusion is a fundamental discourse, and the general intention, in the one-school-for-all ethos. However, intended inclusion can lead to unintended exclusion, our second key finding, as we illustrate in the next sub-section.

## 5.2. Unintended exclusion. Marginalization effects of/in an inclusive discourse

As Vignettes 1–3 illustrate, DTs are considered tools for inclusion in different one-school-for-all eduscapes. However, *access* to DTs is a prerequisite for taking advantage of these features. From a WPR approach, processes related to the digitalization strategy build on the policymakers identification of skewed access to DTs in the Swedish educational system (Almén and Bagga-Gupta, 2019). However, as DTs are supposed to compensate for various kinds of shortcomings that students meet inside and outside schools, students in need of special support previously had exclusive access to DTs before the implementation of the digitalization strategy in 2017. In 2012, for instance, 14% of lower secondary school students and 54% of those in upper secondary school had ubiquitous access to DTs. However, in the same year, the figures for students in need of special support were more than 70% for lower secondary students and 80% for upper secondary students (The Digitalization Commission, 2014). When students in need of special support are the only students with access to DTs, DTs risk becomes stigmatizing (see also Section Intended exclusion. Spatial segregation and unequal distribution of resources).

A prINp aspect of the digitalization strategy was to come to terms with the unintended stigmatizing of students in need of special support since they were the only students with access to DTs

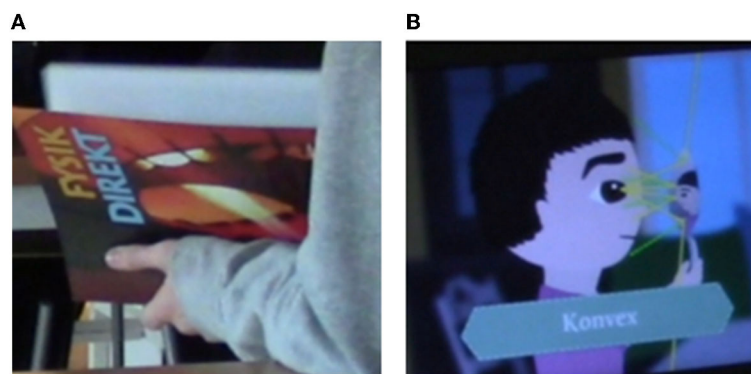


FIGURE 2  
Students' usage of both textbooks (A) and animated movies (B) during physics lessons.

### Vignette 3 SFI teachers' discussion about YouTube as a resource.

The SFI teachers discuss digital tools with one another. They take up the media platform YouTube. The teachers agree that YouTube could be a problematic tool; it is wide, wild, and it is hard to find the right levels of videos for their students. Some students try to use YouTube to learn Swedish, but the quality of the YouTube resources is questionable, they think.

However, under the right circumstances, YouTube could be a very good tool for the students as well, they suggest. The teachers raise examples of students who have learnt Swedish on their own by watching Swedish lessons on YouTube. One YouTube channel where a man gives Swedish lessons in Arabic is highlighted.

(Vignette 4). However, from a pASpa perspective, it is interesting that these students highlight that it is not necessarily an advantage for them that mainstream students get ubiquitous access to DTs.

In other words, providing all students access to DTs with the intent to alleviate the stigmatization of students in need of special support in mainstream classrooms risks their becoming marginalized when they lose the edge that their exclusive access to DTs provided them with previously. Thus, while a discourse of *intended* inclusion governs, the *result* becomes excluding (see also Bagga-Gupta et al., 2016). prINp does not harmonize with pASpa.

Unintendedly marking students in need of special support was not exclusively a feature *before* the digitalization strategy implementation took place. Our post-2017 fieldwork in projects DIP and SLoT (in lower secondary and primary eduscapes, respectively) indicate that students streamed into the subject Swedish as a second language were allowed, and even encouraged, to work in Swedish during other subject lessons (Bagga-Gupta et al., 2021). In primary eduscapes, a focus on the identity positionalities of immigrant students can lead to an unintended marginalization of learning opportunities. For instance, in the SLoT project schools where students were streamed, learners in Swedish lessons participated in an eduscape marked by digital resources, while students studying the subject Swedish as a second language were relocated to smaller satellite rooms where they had access to only analog tools. Some of our other previous studies have also highlighted how socioeconomically marked students become further stigmatized in digitalized classroom settings where their peers have access to expensive personal DTs, such as mobile phones or headphones (Almén, 2021).

### Vignette 4 Consequences of DTs for students in need of special support. Stigma and loss of advantage.

A grade 8 student, who the school identifies as being in need of special support, expresses concern over the stigmatizing effect of being the only student in the class who has access to DTs before the digitalization strategy came into effect:

*it was like people saw me as having problems in school.<sup>15</sup>*

The situation changed, however, when everyone has access to DTs. The class was chosen as an “experiment class” where all students have ubiquitous access to DTs. The student is relieved since the DT will no longer be stigmatized. However, an unexpected problem arose for this student:

*For some it is good [to have access to an iPad], but it is also a little worse for me. Because previously my use of the iPad has allowed me to work quickly [to study], now it is quicker for them as well, so they must wait for me anyway.<sup>16</sup>*

Text-to-speech/speech-to-text features of DTs can facilitate learning for students in need of special support, as we have noted above. However, the same tools can unintentionally exclude students from learning, as we can note in Vignette 5. Here, the teacher encourages students to use the text-to-speech feature if they need to, in line with the compensatory discourse entwined with the one-school-for-all ethos (pASpa). It is, however, first after 28 min of the individual work phase that a student turns to the text-to-speech feature and spends the last 2 min focused on the textbook, i.e., lesson-related content. While DTs have relevance for learning in the case of students identified as being in need of special support, an absence of pedagogical guidance and support means that such students risk losing valuable classroom time, with the result that they can lag further behind their peers. This too illustrates how, despite a strong inclusion discourse, DTs can lead to *outcomes* that are excluding. Furthermore, such instances illustrate how ambitions of a socially sustainable society—to include *all* students in the same societal context—become a danger for *ecological* sustainability, as the school invests in DTs that are not used in pedagogically fruitful ways.

<sup>15</sup> Original: det var ju lite det här att folk såg att den där tjejen har problem i skolan.

<sup>16</sup> Original: För en del är det ju bra [att ha tillgång till iPad], men det är också lite sämre för mig. För jag har ju använt iPaden för det går snabbare för mig [att studera], nu går det ju snabbare för dom också, så då får dom ju ändå vänta på mig.



#### Vignette 5 DTs as distracting elements. Watching YouTube instead of working with designated classroom tasks.

A teacher has just finished a 5-min plenary introduction of a grade 8 history lesson, and the students begin to work individually during the next phase of the lesson which lasts for half an hour. The classroom task is to read a text on the industrial revolution. This reading will be discussed during a subsequent plenary lesson phase involving the whole class. The text is digitalized, and the students are reading it on their laptops. If the students need, or want to, they can take advantage of the text-to-speech feature and listen to the text (Figure 1). During the individual working phase of the lesson, students are allowed to wear headphones. However, some choose to listen to music instead of focusing on the lesson task of listening to the digitalized text. One student puts on the headphones and starts searching for music videos on YouTube. The student spends 28 min of the 30-min phase switching between YouTube and the focused text. The student listens to the text during the last 2 min of the individual work phase via the text-to-speech tool.

#### Vignette 6 SFI teachers' discussions about teaching materials.

Critical toward the lack of good teaching material for their students, SFI teachers highlight the following in a discussion with one another: "Both books and applications are very childish." "There is no focus on what the students need." "It is important that there is material for adults". They agree that good teaching materials are made up of materials that their students can use—"It needs to be relevant and practical." The teachers express that the teaching materials should provide students with something more than just learning the language Swedish. Materials should also prepare students for a life in Sweden, something that also increases their interest in studying SFI.

Quoting a contemporary SFI textbook, a teacher points to the racism embedded in materials: "A white police is chasing a black guy." They call for relevance: "Give us relevant material!"

Unintended exclusion in digitalized educational settings is not limited to compulsory or upper secondary school contexts. While all adult education is supposed to be adapted to individual participant's needs and prerequisites (The Swedish National Agency for Education, 2022b), prINp, a critical aspect of SFI education is understood as lacking individually adapted teaching or being marginally individualized (Reichenberg, 2015; The Swedish Schools Inspectorate, 2018; Government Offices of Sweden, 2022). The Swedish Schools Inspectorate (2018) reports furthermore that most teaching materials used within SFI education tend to be "neutral and prescriptive" rather than "authentic and natural," and that the issue of individualization is accentuated given that textbooks are not adapted for *adult* students (compare Vignette 6). SFI teachers repeatedly highlight the importance of relevant teaching material, where they consider materials that target adults or target different goals in life (such as higher studies or a regular job) as "relevant." As Vignette 6 illustrates, SFI teachers express frustration regarding the lack of relevant teaching materials: they suggest that teaching materials tend to be childish, and even racist. Primary school data from SLoT too illustrates this issue wherein streamed immigrant children are provided with color-filling tasks or required to copy onto sheets of paper what teachers have written on a whiteboard. The racist attitude or the attitude of treating SFI adult students as children or primary students incapable of handling complex materials like their white Swedish peers further marginalizes minoritized students. Their inclusion into mainstream society thus becomes socially unsustainable.

Another example of unintended exclusion in contemporary eduscapes, highlighted by SFI teachers, is the use of computer keyboards provided with Swedish characters (Vignette 7). Many

#### Vignette 7 SFI teachers on their students' experiences with challenges of using new scripts and DTs.

Discussing with one another, SFI teachers highlight that SFI students' familiarity with DTs notwithstanding, their unfamiliarity with the Latin script adds challenges to the learning process. Many immigrant children and adult students, they express, are learning both a (new) alphabet (the Latin script) and a new language (Swedish). However, Swedish laptops and desktop computers are provided only with a Latin character set. This can become an insuperable obstacle for many of these students when they are, for instance, required to enter computer passwords that include lower-case, upper-case, and special characters in a script that they are unfamiliar with.

The SFI teachers highlight that login processes during lessons can take up to 20 min, and the ICT pedagogue has been invited to arrange a 45-min-long lesson on how to log in on the school computers. Due to an insecurity with using an unknown script, many SFI students take help from their children and hand over usernames and passwords to them, when they cannot handle the login process themselves. The SFI teachers express concerns that these children can misuse the situation and report their own sick leave at school. As an SFI teacher puts it, "these children have the power over their sick-leave report" and have control over their parents' communication with other authorities.

#### Vignette 8 Spatially segregated SFI education.

SFI teachers often create long lessons that last more than 2 h (Figure 3). Therefore, unscheduled breaks become necessary. However, when the SFI education is scheduled in a satellite building (Figure 4), teachers and students share all spaces, including recreation areas and restrooms. Pedagogically, it could be advantageous for the students to have access to their teachers during the breaks, teachers highlight. It is often then that students can ask about mundane but highly critical issues such as contacts with Swedish authorities. However, teachers have nowhere to withdraw and report a sense of having an "intense" working time.

Another problem relates to satellite buildings (Satellite Building 1 in Figure 4) where classes are held, and which were originally not intended for teaching purposes. These spaces are not connected to the school's wi-fi, and barring one iPad, are not equipped with DTs.

students in SFI education use scripts other than Latin; some are illiterate. A mundane tool like a computer keyboard here becomes unintentionally excluding for a student who is not acquainted with the Latin script. It is unclear why alternative scripts that students are familiar with are not made available via DTs.

The paucity of relevant materials, in combination with a skeptical attitude to DTs in education expressed by many SFI students, risks unintentionally alienating students in a one-education-for-all setting, leading to social unsustainability. While inclusive intentions can have excluding effects, another pattern that has emerged in our ethnographically informed analysis across scales and projects relates to how students are intentionally excluded in various ways.

### 5.3. Intended exclusion. Spatial segregation and unequal distribution of resources

Despite the good intentions (prINp) of policymakers, school management, and individual teachers, our analysis from across projects indicates that students in various educational settings can become intentionally segregated from mainstream classroom settings. One example of intended exclusion was illustrated in Vignette 4, where students identified as being in need of special support had exclusive access to DTs (before the implementation



FIGURE 3  
Sampling of an SFI schedule.

of the digitalization strategy). This constitutes, in other words, an instance of a first *position* of how education is organized, as the students in need of special support participate in classroom activities together with mainstream students, and importantly with the enablement of compensatory tools. A more striking segregation takes place when SFI adult and immigrant primary school students are physically segregated from their peers, i.e., students in other programs at MAE or students in the main classroom in primary schools in our dataset.

In Sweden, it is common practice, and in line with a second *position* of educational organization, to spatially separate SFI adult and immigrant primary students from mainstream MAE students or mainstream classroom students. This means that it is common practice to separate immigrant students from white majority Swedes in compulsory schools during Swedish language lessons. The WPR rationale for segregating SFI students from other students could be organizational—SFI education can be conducted by different providers. However, SFI is also a different educational form as compared to mainstream education. While MAE students study upper secondary (and sometimes compulsory) school subjects and courses, with the same syllabi as the younger school students, SFI education has its own curricula and syllabi, with a focus on learning the subject labeled, Swedish for immigrants.<sup>17</sup> Segregating immigrant students in compulsory eduscapes, however, builds on the curricula segregation that maps onto the physical spaces *inside* schools: Swedish for white majority Swedes is offered in mainstream classroom spaces, and the subject called Swedish as a second language is offered in spaces outside the main classroom. Immigrant students are required to relocate to these latter spaces. In both instances, Swedish for immigrants and Swedish as a second language have the larger agenda of enabling integration for students, i.e., to support their becoming a part of Swedish society. In this sense, SFI education and Swedish language

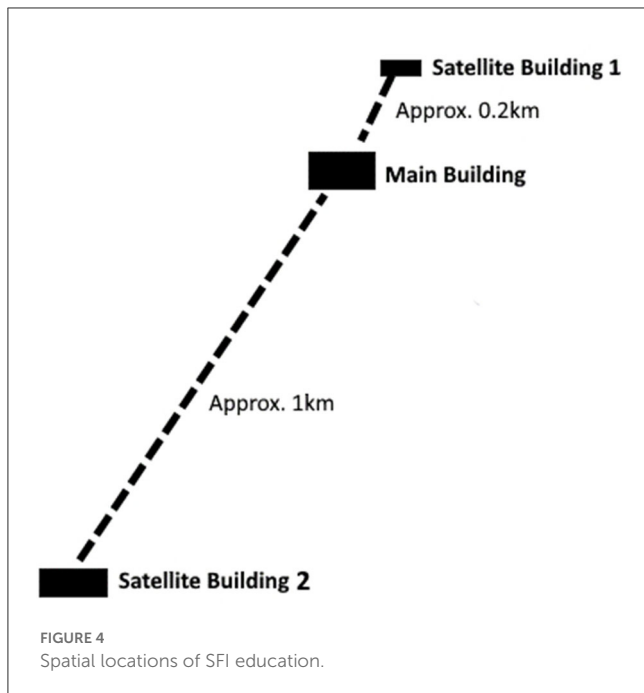
for immigrants rest on an inclusive discourse of the one-school-for-all ethos that becomes emphasized: to participate in Swedish education and work-life, SFI as well as compulsory school students need special organizational arrangements (prINp).

SFI education was previously (project CIC data) and is presently (project DIP data) scattered spatially. Data from the latter indicate that SFI education is conducted in three different locations (Figure 4). It is provided in the main building in the same locations as other MAE and upper secondary education provision is made available and is also conducted in a separate building (Satellite Building 2) where other MAE education provision is located. Access to DTs is at par with the access that other students have in both the main building and Satellite Building 2. In these spaces, teachers and students can use DTs ubiquitously. In a third setting—Satellite Building 1—only SFI education for beginners is conducted. Satellite Building 1 is not connected to the school wi-fi facilities, and the only accessible DT is one iPad (Vignette 8). This unequal access to DTs in SFI education maps onto the provision of SFI education in Sweden, where the [Government Offices of Sweden \(2022\)](#) report that SFI education has serious problems in reaching the goals of the 2017 digitalization strategy. Approximately one-third of the students have ubiquitous access to DTs, while two-thirds have some or no access to DTs (Malmbo, 2019; [Government Offices of Sweden, 2020](#)). [The Swedish National Agency for Education \(2022d\)](#) reports that the computer density in SFI in 2021 is two students per computer, compared to one computer per student in compulsory and upper secondary schools.<sup>18</sup> In other words, the one-school-for-all ethos is foremost a matter for compulsory and upper secondary education, and less so for SFI MAE.

As we have seen in Sections Intended inclusion. One-school-for-all, Unintended exclusion. Marginalization effects of/in an inclusive discourse, and Intended exclusion. Spatial segregation and unequal distribution of resources, the implementation

<sup>17</sup> SFI is in other words both an educational form and a school subject.

<sup>18</sup> However, the computer per student density was only four students per computer in mainstream MAE.



of the key one-school-for-all agenda and policies following in its wake, like the digitalization strategy 2017, both results in intended and unintended effects. These outcomes are analytically discussed in the final part of this study.

#### 5.4. A sustainable social-ecological place of digital tools in contemporary eduscapes?

Declared and perceived policies, conceptualized as prINp, are framed by values of inclusion and equality, in the nation-state of Sweden. Perceived and practiced policies, conceptualized as pASpa, in many regards, are marked by segregation, despite purportedly good intentions. Our ethnographical informed analysis both in earlier studies (Rosén and Bagga-Gupta, 2013, 2015; Bagga-Gupta, 2022, 2023) and in the present one highlight the complex nature of and tensions between prINp and pASpa. While the Swedish School law, curricula texts, and local regulations spell out declarations (declared policies), accounts of teachers and students (perceived policies) differ from everyday life in classrooms where compulsory school and SFI students in need of various types of special support are integrated and/or segregated both *in*, and *from*, mainstream classrooms. The latter practiced policies can play out as both first and second positions on how education gets organized. SFI students and immigrant students in compulsory schools are spatially segregated from mainstream eduscapes and are provided with educational materials that may have racist overtones and that might not be age-relevant. Two different homogenous groups meet in such settings: homogenous minoritized students and homogenous majority white teachers. Unintentionally, secondary students in need of special support may be left alone and may end up browsing YouTube videos during classroom time. Secondary school students in need of special support risk becoming stigmatized when they are the only student/s in mainstream classrooms provided with DTs. The rationale for this practice is paradoxically in line with an inclusive discourse—to be included

in mainstream classrooms, students who are seen to be in need of special support are segregated from mainstream students as they require special adaptations. It can be argued that such a taken-for-granted understanding of the organization of eduscapes is neither socially nor ecologically sustainable. A socio-ecological sustainable point of departure would push for eduscapes where the needs of *all* students and teachers are considered, where students and teachers consider themselves as valuable societal resources, and where the use of *all* resources, both material *and* human—students and teachers, are taken into conscious and responsible consideration.

Our analysis highlights an entanglement of seemingly contradictory strategies. Languageing of inclusion is entangled with the languageing of segregation. In classroom practices where secondary students in need of special support use DTs as inclusive compensatory tools, the same practice, the same students, and the same tools become exclusionary when students spend vital lesson time watching non-lesson related YouTube videos, or other students become stigmatized due to their exclusive access to DTs. In SFI classroom practices, teachers' work has an overarching societally framed inclusive ambition, wherein the goal is to integrate immigrant and refugee students into mainstream Swedish society. They language this in terms of the need for relevant teaching materials and language education for future work or studies. At the same time, digitalized classroom practices include the provision of DTs such as laptops or keyboards with Latin character keys, a script that may be unfamiliar to many students. In this sense, an artifact like a keyboard or materials that are not age-relevant become obstacles in students' learning processes, and their languageing possibilities become curtailed. Non-familiarity with key DTs (like a keyboard) plays out also in students' possibilities to express their positionalities. SFI students may have an uphill task before they can participate actively in mainstream society when socialization institutional contexts themselves are disabling sites of engagement. Unfamiliarity with DTs is likely to disadvantage them further when they have no choice but to hand over sensitive data (and thus their agency) to other family members, including their children. From a social-ecological sustainable, and SWaSP, perspective, these issues are problematic. The fundamental nature of communicative processes impinges on people's positionalities and eduscapes do not (as we have seen in Vignettes 4–8) always create meaningful opportunities for relevant languageing.

In complex societal interactions, (policy) discourses and perceptions and (policy) practices, prINp and pASpa, are entwined. One specific discourse, the (neo-)liberal economic discourse, is hegemonically entwined with other discourses. This discourse has characterized the Swedish educational debate for decades (e.g., Lundahl et al., 2013). New public management (NPM) was introduced as a governing system in 1990 (Allodi, 2013), giving rise to parallel independent schools whereby commercial actors were granted possibilities to organize education at all levels.<sup>19</sup>

<sup>19</sup> This reform, "Friskolereformen" (Eng. "The Free School Reform"), has meant that a "skolpeng" (Eng. "school money") follows every student. This skolpeng is paid by the municipality to the education provider, irrespective of whether this provider is the municipality where the student lives, another municipality, or a commercial education provider. This system drives a competition between schools, and many Swedish schools, including municipal schools, spend considerable resources on marketing their brand.

These neoliberal shifts are reported to have profoundly changed the Swedish eduscape and jeopardized social sustainability, where values like competitiveness and measurement are deemed more important than pedagogical values (Lundahl et al., 2013), and competitiveness between individual teachers is more important than cooperation (Erlandson and Karlsson, 2018). Children and adult students in the contemporary Swedish eduscape are reported to suffer from stress and mental illness due to an increasingly competitive discourse that characterizes their everyday school life (Anniko, 2018; Högberg et al., 2021; Public Health Agency of Sweden, 2022). In the long run, and from a social-ecological sustainable perspective, these issues need scrutiny, not least since students with mental illnesses in contemporary societal spaces of Sweden risk life outside societal communities tomorrow. In our previous studies that have focused on compulsory eduscapes, we have highlighted how liberal economic discourses shape the digitalization strategy of 2017 (Almén and Bagga-Gupta, 2019; Almén, 2021; see also Bagga-Gupta and Bäcklund, under review). A fundamental rationale for the government's digitalization strategy was the (economical) competitive goal that would make Sweden "a world leader in digitalization." In line with our previous work that illuminates how SFI education historically emphasized students as a potential workforce (Rosén and Bagga-Gupta, 2013), the present study indicates how liberal economic discourses continue to be entwined with SFI education, for instance, in teachers' call for "useful" teaching materials, where useful indicates that SFI education is supposed to lead to a job (sometimes via higher education).

Sweden's declared language policy, in the language law (SFS nr: 2009:600), stipulates that Swedish is the main language in Sweden and that *all* societal areas shall use Swedish. However, SFI teachers display a perceived language policy, where language is considered language-in-practice. Here, language discourses are characterized by values of usefulness, where usefulness is defined as language-at-work or language-in-studies (see also Rosén and Bagga-Gupta, 2013). After three decades, liberal economic discourses have become an integrated part of the Swedish school system, not least given that many contemporary teachers started their careers after 1990. Therefore, contemporary eduscapes in Sweden are characterized by liberal economic discourses as part of the educational actors' everyday practices where economic values like labor<sup>20</sup> and competitiveness dominate.

To (un-)intentionally segregate students inside and outside eduscapes creates a mentality of "we" and "them." *We* include students who participate in the social activities inside mainstream classrooms, the rest leave the classroom for Swedish as a second language lesson or learn SFI segregated from other MAE students. *We* include those who read mainstream textbooks, and *they* include those in need of special support and have to use a digital tool to access the material. *We* include those who are

cognizant of the majority language and are provided with age-relevant materials, and *they* include those who do not know the language (as yet) and are provided with non-age-relevant materials. In a social-ecological sustainable society, the endeavor needs instead to consist of a comprehensive "we," a society where every individual can experience being part of a common community. We suggest that thinking with a third position enables this.

In some of our earlier studies (Almén et al., 2020; Almén, 2021), we have illustrated how the usage of multimodal-centered classroom interaction orders is pedagogically richer in comparison to monomodal (text-)centered classroom practices. Text-to-speech tools emerge as an especially useful DT in several educational settings we have focused on in the present study. Text-to-speech tools add the audio modality to the written text modality and can be used by students with different pre-requisites and backgrounds in the educational system, if and when they are provided with different DTs—laptops, mobile phones, and tablets—that they are familiar with. Another example of multimodality can be seen in what SFI teachers highlight: how SFI students appear to learn Swedish on their own, in both formal and informal settings, by watching YouTube videos on Swedish grammar. Platforms like YouTube, and text-to-speech tools, are services that are independent of students' preferred DTs. While they are independent of settings, they can be engaged with inside school, at home, on the bus, etc. Furthermore, students do not need to pay any fees to engage with the Swedish grammar lessons on YouTube. When SFI students choose to use multimodal services like video-streamed grammar lessons, their agency with regard to their chosen path, and choice of mediating tools for learning, increases. Increasing the agency of one such important thing in life as learning a new majority language can empower students and provide possibilities to participate actively as members of society, and a society where people living in it participate actively in it is a more sustainable society.

When students can read texts of their own choice, facilitated by text-to-speech tools, they have the possibility of enriching one another in discussions of different texts. When students choose grammar lessons best suited to their needs, they increase their agency. Choosing ways of learning based on individual needs, rather than through processes of segregation, is a way to enrich both individual students *and* classrooms as a whole. This lies in line with *the third position* of classroom organization. Adhering to inclusion principles, where every student's strength is valued and every student's weakness is considered a dimension of the *normal diversity* of a one-school-for-all, makes a more social-ecological sustainable education possible.

## 6. Conclusion

This study has illuminated the nature of agendas transgressing the one-school-for-all framework within contemporary Swedish eduscapes. Here, a special focus has been on digitalization processes. Taking a multi-scalar perspective, this study focuses on both compulsory and adult education, and by drawing data from four research projects, its ambition has been comprehensive.

The one-school-for-all framework builds on the aim of democratizing the Swedish eduscape, and providing equal

<sup>20</sup> This interaction order is institutionalized in the Swedish society as "arbetslinjen" (English: "the line of work"). Arbetslinjen means that (the most) crucial value in all political decisions is that the decision will enhance the possibility of getting a job. Almost all major political parties in Sweden support this idea.



possibilities to all students, irrespective of age, background, or other prerequisites. We have highlighted that this declared policy, here conceptualized as prINp, conflicts with practiced policies, here conceptualized as pASpa. We have illustrated how students in need of special support are segregated within mainstream classrooms—in line with a first position of classroom organization, SFI students are provided with alienating DTs and socioeconomically vulnerable students are marked when other students bring expensive personal DTs to school. We have also highlighted how both compulsory school students, within the subject Swedish as a second language, and adult students, within SFI education, are physically segregated from mainstream education, in line with a second position of classroom organization. Furthermore, we have highlighted how pedagogical values are challenged by competitiveness and measurements framed by neoliberal discourses of new public management. At an overarching level, these issues jeopardize social sustainability as they alienate both young and adult students, from mainstream society. They also jeopardize ecological sustainability as actors across the eduscape invest in DTs that are not used or are misused.

However, this study also highlights examples of how DTs facilitate the fulfillment of the one-school-for-all ambitions. Students, both within compulsory and SFI settings, deploy various multimodal features and tools for tailoring their learning. When students within the same setting use learning tools of their own preference, they potentially enrich one another. Such inclusive learning environments can be conceptualized as a third position of classroom organization. We argue that such an organization leads to both socially and ecologically sustainable eduscape.

The nature of a third position of classroom organization needs further empirical engagement. What does a third-position organization of education imply? Do all students in such settings benefit? In particular, what does this imply for SFI education, where a paucity of scholarship exists from students' perspectives within the Swedish eduscape. By going beyond mainstream ways of understanding the roles of tools in contemporary eduscapes, a scholarship can, as we illustrate in this study, contribute to social-ecological sustainability.

## References

- Allodi, M. W. (2013). Simple-minded accountability measures create failing schools in disadvantaged contexts: a case study of a Swedish junior high school. *Policy Futures Educ.* 11, 331–363. doi: 10.2304/pfie.2013.11.4.331
- Almén, L. (2021). *One-school-for-all As Practice. A Nexus Analysis of Everyday Digitalization Practices* (Doctoral thesis), Jönköping: Jönköping University.
- Almén, L., and Bagga-Gupta, S. (2019). “Inscriptions and digitalization initiatives across time in the nation-state of Sweden. The relevance of shifts and continuities in policy accounts for teachers work,” in *Virtual Sites as Learning Spaces (VILS). Critical issues on languaging research in changing eduscapes in the 21st century.*, eds. S. Bagga-Gupta, G. Messina Dahlberg and Y. Lindberg (Palgrave Macmillan, Cham). doi: 10.1007/978-3-030-26929-6\_2
- Almén, L., Bagga-Gupta, S., and Bjursell, C. (2020). Access to and accounts of using digital tools in Swedish secondary grades: an exploratory study. *J. Inf. Technol. Educ.-Res.* 19, 287–314. doi: 10.28945/4550
- Andersson, P., and Muhman, K. (2021). Marketisation of adult education in Sweden. *J. Adult Contin. Educ.* 28. doi: 10.1177/14779714211055491
- Anniko, M. (2018). *Stuck on Repeat: Adolescent Stress and The Role of Repetitive Negative Thinking and Cognitive Avoidance*. Doctoral thesis, Comprehensive summary. Örebro: Örebro University.
- Bacchi, C. L. (2009). *Analysing Policy: What's the Problem Represented to be?* French Forest NSW: Pearson.
- Bagga-Gupta, S. (2014). “Languaging. Ways-of-Being-With-Words Across Disciplinary Boundaries and Empirical Sites,” in *Language Contacts at the Crossroads of Disciplines*, eds. H. Paulasto, L. Meriläinen, H. Riionheimo and M. Kok (Newcastle-upon-Tyne: Cambridge Scholars Publishing).
- Bagga-Gupta, S. (2017). Language and identity beyond the mainstream. Democratic and equity issues for and by whom, where, when and why. *JESLA*. 1, 102–112. doi: 10.22599/jesla.22
- Bagga-Gupta, S. (2018). Going beyond “single grand stories” in the Language and Educational Sciences. A turn towards alternatives. *Aligarh J. Linguist.* 8, 127–147. Available online at: <http://urn.kb.se/resolve?urn=urn:nbn:se:hj:diva-42343>
- Bagga-Gupta, S. (2020). “A third-position regarding a one-school/society-for-all: On “making the impossible possible” and “driven for culture, young-people and coffee”,” in *On 3rd positions in democratic contexts. An education-for-all, culture-for-all and a society-for-all*, eds. S. Bagga-Gupta and P. Weckström. (Jönköping: School of Education and Communication, Jönköping University), 1–29.
- Bagga-Gupta, S. (2022). “Promises in policy” and “policy as participation”: equity and language in and across the wilderness of contemporary human life. *Bandung*. 9, 103–133. doi: 10.1163/21983534-09010005

## Data availability statement

Video data are not readily available due to privacy concerns. The rest of the raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin or by the adult participants themselves.

## Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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- Bagga-Gupta, S. (2023). "What and why of equity for whom and where. Analytical engagement with promises-in-policy and policy-as-participation." in *Language Policy as Practice*, eds. F. Bonacina-Pugh (Palgrave MacMillan).
- Bagga-Gupta, S. (2023a). Epistemic and Existential, E2-Sustainability. On the need to un-learn for re-learning in contemporary spaces. *Front. Commun.* 8, 1081115. doi: 10.3389/fcomm.2023.1081115
- Bagga-Gupta, S. (2023b). "Analytical-methodological entanglements. On learning to notice what, where, when, why and by whom in the re-search enterprise," in *Re-Theorizing Learning and Research Methods in Learning Research*, eds. C. Damsa, A. Rajala, G. Ritella, and J. Brouwer (London: Routledge), 83-104.
- Bagga-Gupta, S. (2023c). Troubling circulating discourses on planet earth. Attending to complexities, through a mobile-loitering gaze. *J. Multicult. Discourse.* 17, 338–354. doi: 10.1080/17447143.2023.2203706
- Bagga-Gupta, S., and Bäcklund, J. (under review). Making education matter and educational matters in the 21st century. Digital presence of schools. *Educational Technology and Society*.
- Bagga-Gupta, S., and Carneiro, A. (2021). Commentary: Nodal frontlines and multisidedness. Contemporary multilingual scholarship and beyond. *Int. J. Multilingual.* 18, 320–335. doi: 10.1080/14790718.2021.1876700
- Bagga-Gupta, S., and Kamei, M. (2022). Lines, liminality and lim. Disrupting the nature of things, beings and becomings. Special Issue. *Bandung J. Glob. South.* 9, 249–278. doi: 10.1163/21983534-09010010
- Bagga-Gupta, S., Messina Dahlberg, D., and Winther, Y. (2016). Disabling and enabling technologies for learning in higher education for all: issues and challenges for whom? *Informatics.* 3, 21. doi: 10.3390/informatics3040021
- Bagga-Gupta, S., and Messina Dahlberg, G. (2021). On studying peoples? participation across contemporary timespaces: Disentangling analytical engagement. *Crit. Pract. Stud.* 22, 49–88. Available online at: <https://tidsskrift.dk/outlines/article/view/125861>
- Bagga-Gupta, S., Messina Dahlberg, G., and Almén, L. (2021). "Gatekeepers and gatekeeping: On participation and marginalisation in everyday life," in *Accessibility Denied. Understanding Inaccessibility and Everyday Resistance to Inclusion for Persons with Disabilities*, eds. H. Egard, K. Hansson and D. Wästerfors (New York, NY: Routledge). doi: 10.4324/9781003120452-6
- Bonacina-Pugh, F. (2012). Researching 'practiced language policies': insights from conversation analysis. *Lang. Policy.* 11, 213–234. doi: 10.1007/s10993-012-9243-x
- Borgestig, M., Falkmer, T., and Hemmingsson, H. (2013). Improving computer usage for students with physical disabilities through a collaborative approach: a pilot study. *Scand. J. Occup. Ther.* 20, 463–470. doi: 10.3109/11038128.2013.837506
- Erlanson, P., and Karlsson, M. R. (2018). From trust to control-the Swedish first teacher reform. *Teach. Teach.* 24, 22–36. doi: 10.1080/13540602.2017.1379390
- Government Offices of Sweden (2012). Digitaliseringskommissionen-en kommission för den digitala agendan (Eng. The Digitalization Commission-A Commission for the Digital Agenda). Available online at: <http://www.regeringen.se/49bba8/contentassets/538820854eccc4bf2842e139f84b4b723/digitaliseringskommissionen---en-kommission-for-den-digitala-agendan-dir-201261>
- Government Offices of Sweden (2020). "Samverkande krafter-för stärkt kvalitet och likvärdighet inom komvux för elever med svenska som andraspråk (Eng. Cooperating Forces - for Strengthened Quality and Equivalence for Students with Swedish as a Second Language)" (Stockholm).
- Government Offices of Sweden (2022). "En modell för att mäta och belöna progression inom sfi (Eng. A Model for Assess and Reward Progression in SFI)".
- Högberg, B., Lindgren, J., Johansson, K., Strandh, M., and Petersen, S. (2021). Consequences of school grading systems on adolescent health: evidence from a Swedish school reform. *J. Educ. Policy.* 36, 84–106. doi: 10.1080/02680939.2019.1686540
- Ingold, T. (2015). *The Life of Lines*. Milton Park, Abingdon, Oxon: Routledge.
- Ingold, T. (2017). On human correspondence. *J. R. Anthropol. Inst.* 23, 9–27. doi: 10.1111/1467-9655.12541
- Lidström, H., and Hemmingsson, H. (2014). Benefits of the use of ICT in school activities by students with motor, speech, visual, and hearing impairment: a literature review. *Scand. J. Occup. Ther.* 21, 251–266. doi: 10.3109/11038128.2014.880940
- Lundahl, L., Arreman, I. E., Holm, A.-S., and Lundström, U. (2013). Educational marketization the Swedish way. *Educ. Inq.* 4, 22620. doi: 10.3402/edui.v4i3.22620
- Malmbo, L. (2019). "Digitalisering inom sva och sfi på vuxenutbildningen (Eng. Digitalization in Swedish as a Second Language and SFI in Adult Education)". Nationellt centrum för svenska som andraspråk.
- Mignolo, W. (2012). *Local Histories/Global Designs Coloniality, Subaltern Knowledges, and Border Thinking*. Princeton, NJ: Princeton University Press.
- Nordström, T., Nilsson, S., Gustafson, S., and Svensson, I. (2019). Assistive technology applications for students with reading difficulties: special education teacher's experiences and perceptions. *Disabil. Rehabil.: Assist. Technol.* 14, 798–808. doi: 10.1080/17483107.2018.1499142
- Public Health Agency of Sweden (2022). "Självrapporterad stress, somatiska och psykiska besvär bland skolbarn (Eng. Self Reported Stress, Somatic and Mental Troubles among School Children)" (Solna).
- Reichenberg, M. (2015). "Utbildning i svenska för invandrare på ett lärcenter. En utvärdering av verksamheten (Eng. Education in Swedish for Immigrants at an Educational Centre. An Evaluation of the Activity)", in: *RIPS: Rapport från Institutionen för pedagogik och specialpedagogik*.
- Rosén, J., and Bagga-Gupta, S. (2015). Prata svenska, vi är i Sverige! [Talk Swedish, we are in Sweden!]: a study of practiced language policy in adult language learning. *Linguist. Educ.* 31, 59–73. doi: 10.1016/j.linged.2015.05.003
- Rosén, J. K., and Bagga-Gupta, S. (2013). Shifting identity positions in the development of language education for immigrants: an analysis of discourses associated with 'Swedish for immigrants'. *Language, culture, and curriculum.* 26, 68–88. doi: 10.1080/07908318.2013.765889
- SFS nr: 2009:600 Språklag (eng. Language law). Available online at: [https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/spraklag-2009600\\_sfs-2009-600](https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/spraklag-2009600_sfs-2009-600) (accessed January 12, 2023).
- SFS nr: 2010:800 Skollag (eng. School law). Available online at: [https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/skollag-2010800\\_sfs-2010-800](https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/skollag-2010800_sfs-2010-800) (accessed September 12, 2022).
- The Digitalization Commission (2014). *En digital agenda i människans tjänst - en ljusnande framtid kan bli vår (Eng. A Digital Agenda in Service of the Human Being - A Brightening Future Can be Ours)*. Stockholm: Fritzes.
- The Government of Sweden (2015). "Uppdrag att föreslå nationella it-strategier för skolväsendet (Eng. Commission to Propose National IT Strategies for the School System)", (ed.) M.o.E.a. Research (Stockholm: Ministry of Education and Research).
- The Government of Sweden (2017). "Nationell digitaliseringsstrategi för skolväsendet (Eng. National digitalization strategy for the school system)", (ed.) Utbildningsdepartementet.
- The Swedish National Agency for Education (2013). *Curriculum for the Upper Secondary School*. Stockholm.
- The Swedish National Agency for Education (2014). "Arbete med extra anpassningar, särskilt stöd och åtgärdsprogram (Eng. Work with extra adaptations, special support and remedial measures)" (Stockholm: Fritzes).
- The Swedish National Agency for Education (2017). "Få syn på digitaliseringen på gymnasial nivå. Ett kommentarmaterial för gymnasieskolan, gymnasiesärskolan samt komvux och särsvux på gymnasial nivå (Eng. Get Sight of the Digitalization on Upper Secondary Level. A Commentary Material for Upper Secondary School, Upper Secondary Education for pupils with Intellectual Disabilities, Adult Education, and Adult Education for Pupils with Intellectual Disabilities)".
- The Swedish National Agency for Education (2018). "Curriculum for the compulsory school, preschool class and school-age educare. REVISED 2018" (Stockholm).
- The Swedish National Agency for Education (2019). "Digital kompetens i förskola, skola och vuxenutbildning. Skolverkets uppföljning av den nationella digitaliseringsstrategin för skolväsendet 2018 (Eng. Digital competence in preschool, school and adult education. The follow-up of The Swedish National Agency for Education of the national digitalization strategy for the school system 2018)".
- The Swedish National Agency for Education (2020). "Få syn på digitaliseringen i vuxenutbildningen. Kommunal vuxenutbildning (Eng. Get Sight of the Digitalization in Adult Education. Municipal Adult Education)".
- The Swedish National Agency for Education (2021). "Elever och studieresultat i kommunal vuxenutbildning 2020 (Eng. Students and Study Results in Municipal Adult Education 2020)".
- The Swedish National Agency for Education (2022a). "Få syn på digitaliseringen på grundskolenivå. Ett kommentarmaterial till läroplanerna för förskoleklass, fritidshem och grundskoleutbildning (Eng. Get Sight of the Digitalization in Compulsory School Level. A Commentary Material to the Curricula for Preschool Class, Leisure-time Centre, and Compulsory School)".
- The Swedish National Agency for Education (2022b). *Läroplan för vuxenutbildningen (Eng. Curriculum for the Adult Education)*. Available online at: <https://www.skolverket.se/undervisning/vuxenutbildningen/komvux-svenska-for-invandrare-sfi/laroplan-for-vux-och-kursplan-for-svenska-for-invandrare-sfi/laroplan-lvux12-for-vuxenutbildningen> (accessed September 12, 2022).
- The Swedish National Agency for Education (2022c). "Pedagogisk personal i skola och vuxenutbildning-läsåret 2021/22 (Eng. Pedagogic Personnel in School and Adult Education - School Year 2021/22)" (Stockholm).
- The Swedish National Agency for Education (2022d). "Skolverkets uppföljning av digitaliseringsstrategin 2021 (Eng. The Swedish National Agency for Education's Follow-up of the Digitalization Strategy)" (Stockholm).
- The Swedish Schools Inspectorate (2018). "Undervisning i svenska för invandrare (Eng. Education in Swedish for Immigrants)" (Stockholm).