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Engaging with Scale and Place: Geographical Thinking on Migration in Middle-School

Zur Auseinandersetzung von Maßstab und Raum: Geographisches Denken am Beispiel von Migration in der Mittelstufe

Evaluación de las creencias de autoeficacia de los futuros profesores de Geografía en la formación para la experimentación en las enseñanzas de la Geografía – presentación y validación de un instrumento de medida

Johan Sandahl

Zusammenfassung Dieser Artikel widmet sich den Herausforderungen der Vermittlung von Migration als komplexer Inhalt im Geographieunterricht der Mittelstufe. Im Rahmen des gemeinsamen Forschungsprojektes eines schwedischen Forschers und eines schwedischen Lehrers beschäftigten sich die Schülerinnen und Schüler mit Daten und verschiedenen Arten von Wissen, um tiefes geographisches Wissen zu entwickeln. Der Artikel liefert empirische Beispiele für tiefes geografisches Wissen, indem er beschreibt, wie sich das Verständnis von Migration bei Schülerinnen und Schülern der Mittelschule (12 Jahre) durch den Unterricht verändert hat. Der Artikel beleuchtet die Vorurteile der Schülerinnen und Schüler zum Thema Migration und beschreibt die Lehrintervention mit kontextuellen Inhalten sowie inhaltlichen und prozessualen Konzepten. Ein wesentlicher weiterer Beitrag ist, wie sich das Denken der Schülerinnen und Schüler im Nachgang des Unterrichts entwickelte.

Schlüsselwörter Geographieunterricht, Geographisches Denken, Migration, Maßstab, Raum

Abstract This article addresses the challenges of teaching migration as a complex content in middle-school geography education. In this collaborative educational design research project between a researcher and teacher in Sweden, students engaged with data and different types of knowledge to develop *powerful geographical knowledge*. The article provides empirical examples of powerful geographical knowledge through descriptions of how middle-school students' (12-year-olds) understandings of migration changed through teaching. The article highlights students' preconceptions about migration and describes the teaching intervention with contextual content, and substantive and procedural concepts. It also addresses how students' reasoning developed after the teaching.

Keywords geography education, geographical thinking, migration, scale, place

Resumen Este artículo aborda los desafíos de enseñar la migración como un contenido complejo en la educación geográfica en la escuela secundaria. En este proyecto colaborativo de investigación de diseño educativo entre un investigador y un profesor en Suecia, el alumnado interactuó con datos y diferentes tipos de conocimiento para desarrollar un conocimiento geográfico poderoso. El artículo proporciona ejemplos empíricos de conocimiento geográfico poderoso a través de descripciones de cómo el alumnado de secundaria (12 años) cambiaron su comprensión de la migración a través del proceso de enseñanza. El artículo resalta las ideas preconcebidas del alumnado sobre la migración y describe la intervención docente con contenidos contextuales y conceptos sustantivos y procedimentales. También aborda cómo se desarrolló el razonamiento de los estudiantes después de la intervención.

Palabras clave Didáctica de la Geografía, pensamiento geográfico, migración, escala, lugar

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1. Introduction

Migration is as old as humanity and, throughout history, humans have interrelated in networks to spread ideas, innovation and culture (McNeill & McNeill, 2003; Goldin et al., 2011). Currently, we are presumed to be in the third wave of global mass migration, which began in the wake of globalisation in the early 1980s (Goldin & Reinert, 2012). According to the 2022 UN Migration Report (UN, 2022), the number of migrants has increased rapidly since then, reaching 281 million people in 2020 before a drastic, and probably temporary, decrease due to Covid-19 in the following two years. Most of these people migrate due to economic incentives–the number of asylum seekers and refugees amounts to approximately ten per cent of the total number of migrants. In terms of numbers, most migration occurs in Asia, followed by Europe and the United States (UN, 2017, 2022; OECD et al., 2019), resulting in opportunities and challenges for both originating and receiving countries.

For geography teachers, it is a challenging task to plan and implement teaching that helps students to understand and analyze migration beyond their own experiences and perceptions, which are often colored by a media narrative in which migrants are equated with refugees (Bello, 2015). One suggested answer is to focus on the idea of *Powerful Geographical Knowledge*, whereby students practice disciplinary understandings of complex geographical processes such as global migration (Lambert & Morgan, 2010; Lambert, 2011; Biddulph & Lambert, 2017). Lambert (2014) defined powerful geographical knowledge, in contrast to everyday knowledge, as being evidence and disciplined based, conceptual and a system of thought. Although this idea of powerful knowledge has been challenged by other scholars (Roberts, 2013, 2014; Maude, 2016; Catling, 2021), there has been a consensus that there are certain powerful geographical concepts that students need to engage with–procedurally–in order to be able to analyze geographical issues such as migration. These procedural concepts have been labelled *higher-order concepts*, *key concepts*, *big concepts* or just *geographical thinking*, and differ from substantive concepts since they indicate a doing rather than an understanding of factual concepts.

These types of big concepts can be described as disciplinary and procedural tools that help geographers to organize, analyze, interpret, and critically review geographical problems. Taylor (2009, 2018), Dessen Jankell et al. (2021), Roberts (2013, 2022) and Catling (2021) have all emphasized such concepts as important in students' enquiry work, allowing them to engage with information, practice their ability to reason and develop and evaluate arguments. Suggested concepts include higher-order thinking skills such as comparing phenomena, analyzing cause and effect, and understanding and using key geographical concepts such as space, place and scale (Taylor, 2009, 2018; Dessen Jankell et al., 2021).

Powerful knowledge within geography education has become a growing field of research, particularly in theoretical terms. Research from classrooms, however, is scarce and evidence-based research is highly sought after (Roberts, 2010). Studies within the field focus on specific procedural concepts, e.g., *relational thinking* and *system thinking* and mainly with older students, i.e., secondary-level students (see Bladh [2014]; Segall & Helfenbein [2008] on the lack of research with younger students; and Catling [2021] on challenges for primary-school children in geography education). In a series of articles, Cox et al. (2017, 2019, 2020) studied secondary-school students' geographical thinking and concluded that their standard of procedural thinking is quite low but can be improved through appropriately designed teaching. By deploying learning activities focusing on causality and scale, they show promising results, stressing the importance of practicing procedural knowledge in geography education. Catling (2021) emphasizes a similar focus on *big ideas*, although more theoretically, to ensure a high-quality, meaningful geography education.

Specific research on teaching about migration, or even students' understandings of migration, is even more scarce. The literature largely focuses on young people's (e.g., those aged 12–17) attitudes towards (im)migration – which is primarily seen as a problem caused by wars, where migrants are assumed to be refugees (Castles, 2010). In this literature, young people are seen to be part of a greater narrative originating from media coverage of congested boats, refugee camps and chaotic border scenes–a narrative that plays an important role in constructing young people's perceptions about migration and migrants (Bello, 2015; van Klingeren et al., 2017; Sandahl & Dessen Jankell, 2018).

Young people have many sources of information, but internalize them through their own lived experiences (Cangià, 2016). Furthermore, education is seen as a predictor of attitudes towards migration and immigrants (Hainmueller & Hiscox, 2007; Mella, 2011). Mella (2011) suggests that education in itself pro-

vides a broader international context, opportunities for abstract thinking and possibilities to understand the situation of migrants from different perspectives.

In a German context, Golser et al. (2019) worked conceptually with students in upper secondary school using terms and concepts related to migration, such as refugees and asylum seekers. Students were asked to place the terms in a four-field graph *(Wertequadrat)* with two axes (positive/negative, voluntary/forced). Their placements were compared with the use of the terms in legal/academic texts and in the media. This comparison allowed students to consider the normative connotations intertwined with the terms and understand that terms and concepts can be used very differently. The study indicated that students became more aware of the importance of definitions.

However, such research on teaching methods seems rare, and many researchers, particularly those working with the powerful knowledge paradigm, engage in theory rather than practice (see for instance Béneker & van der Vaart, 2020). Still, there is general agreement that there is a need for objective and disciplined knowledge, in contrast to media reports and everyday knowledge (Ryan, 2012). Here, geographical thinking seems to play an important role, although a linkage between specialized knowledge and everyday knowledge is needed (Catling, 2021; Blanck, 2021).

Situated within a framework of Educational Design Research (EDR), this article aims to examine how middle-school students' (12-year-olds) understanding of migration changes as a result of teaching – thus providing empirical examples of powerful geographical knowledge among young children. As previously mentioned, such evidence has been sought in geography education (Catling, 2021; Roberts, 2022). The research questions are: (1) What changes in students' understanding of migration can be observed? (2) In what ways does the teaching design promote powerful geographical knowledge?

2. Theoretical Background: Powerful Geographical Knowledge and Geographical Thinking

For almost a decade, there has been an ongoing discussion within geography education about the notion of powerful knowledge, originating from the work of Young (2008, 2013; Young & Muller, 2013). Young's argument is that the best knowledge originates from epistemic communities where specific and specialized knowledge is produced. This knowledge is powerful because it can explain the world in better ways than everyday knowledge and experiences.

Being a sociologist of education, Young has never claimed particular insight into the various disciplines, or what powerful knowledge might look like in different disciplinary settings. Geography educators were among the first to heed the call to discuss the idea in a more specific domain, and the substantial work of Lambert (2011, 2014, 2016, 2017), Roberts (2013, 2014), Morgan (2011), Lambert and Morgan (2010), Taylor (2009, 2018), Maude (2016, 2018, 2022) and others has been crucial for the development of geographical powerful knowledge. Lambert (2014) defines powerful knowledge, in contrast to everyday knowledge, as evidence-based, abstract and theoretical (conceptual), part of a system of thought, dynamic, evolving, changing (but reliable), tested and open to challenge, sometimes counterintuitive, existing outside of experience and discipline-based.

However, this description is identical to that of scientific knowledge in general and, as Maude (2016) concludes, becomes occupied with questions of philosophy, epistemology and pedagogy in its focus on (a) the characteristics of powerful knowledge, and (b) what kind of power it gives to those who possess it. Other researchers in geography education, particularly Liz Taylor, have tried to discuss "the link between content knowledge and overarching disciplinary ways of organising [content in the discipline]" (Taylor, 2018, p. 97; cf. Maude, 2018, 2022; Catling, 2021) in order to describe the knowledge that is needed to achieve powerful knowledge of the world. Taylor (2009, 2018) has suggested important features of geographical thinking, leaning on previous work in geography education (see also Roberts' mapping in Roberts, 2013). Even though there is no consensus (compare Cox et al., 2020) on a set of thinking concepts, certain key concepts do recur in the literature: *space*, *place*, *scale,* and *interaction* (Leat, 1998; Jackson, 2006; Clifford et al., 2009; Taylor, 2009; Jones & Lambert, 2018; Catling, 2021; Dessen Jankell et al., 2021; Maude, 2022). As geographical thinking is embedded in the key concepts of the discipline (Maude, 2018, 2022; Cox et al., 2020; Catling, 2021; Dessen Jankell et al., 2021), thinking concepts that were particularly important in this study were the concepts of place and scale. In this article, from the diverse theoretical approaches in geography education, powerful geographical knowledge is operationalized using Lambert's (2016, p. 404) typology of different kinds of powerful geographical knowledge:

(a) contextual knowledge ('explanatory world knowledge')

(b) substantive knowledge (subject-related concepts, e.g., push and pull factors, urbanization)
(c) procedural knowledge ('thinking concepts', e.g., place, scale)

However, it is important to note that Lambert's typology is not unique to powerful geographical knowledge, but is rather a common analytical tool employed in subject didactics to distinguish different types of knowledge (cf. Marsden [1997]; for history see Seixas & Morton [2013] and for the social sciences see Sandahl [2015]). Furthermore, it is also important to note that, in many ways, powerful geographical knowledge only addresses disciplinary knowledge. The societal goals of education, such as ethical and normative aims, and the importance of 'everyday geographies' for understanding the world, are often omitted from the discussions and this has been criticized by scholars in the field (Roberts, 2010, 2014, 2022; Maude, 2016, 2022; Bladh et al., 2018; Catling, 2021). In this article, the focus is on disciplinary knowledge, although other aims are touched upon.

Place and Scale as Concepts in Geographical Thinking

Place has been regarded as one of the key thinking concepts of geography (Jackson, 2006; Rawling, 2018; Taylor, 2018; Dessen Jankell et al., 2021; Maude, 2022). Hence, it can be understood as the *raw material* of geography, focusing on particularly meaningful segments of geographical space as: (1) location and (2) meaning (Cresswell, 2008, 2015; cf. Dessen Jankell et al., 2021). *Location* is an objective and definable point in space that can be understood as absolute and/or relative location (a specific and definable point in space versus its relation to other definable places in space). Location also includes features of the physical landscape, such as infrastructure, buildings, parks, entertainment venues etc. On the other hand, meaning can be understood as people's 'sense of place', i.e., the meaning that individuals, groups and societies associate with particular places, which is important for meaning-making processes such as identity (Shelley et al., 2003; Cresswell, 2008, 2015). Together, these aspects constitute what place can be understood to be in terms of a thinking concept when engaging with geographical issues.

Another key thinking concept in geography is *scale*. Originating from cartography, scale has also been employed in the sense of analysis scales or phenomenon scales (Montello, 2001). An analysis scale refers to the level at which the analysis is being conducted, e.g., the local, national, regional or global level, while a phenomenon scale is the dimensions within which processes exist, irrespective of how they are studied; e.g., a phenomenon such as migration is evident at every level, even if we only analyze it at one specific level. This approach to scale highlights an important feature of geography education: different levels are interconnected, and in order to achieve a comprehensive understanding of a phenomenon, these interconnections need to be highlighted in geography (Lambert & Morgan, 2010; Skarstein & Wolff, 2020).

Place and scale are contested concepts and contain many perspectives and aspects, especially regarding different strands of theoretical understanding (cf. Cresswell, 2008; Cox et al., 2020). However, given the circumstances of this study with middle-school students, our use of the concepts of place and scale needed to be somewhat simplified and *usable*. A definition of these concepts was adopted in relation to migration and the methodological approach (see below). Hence, *place* was primarily delimited with regard to *location* rather than meaning, focusing on different places and their characteristics, as well as their relation to one another. However, meaning can never be omitted because we as humans always produce meaning when we relate to places. *Scale* focused on both *analytical scales* and *phenomenon scales* because students were expected to engage with both in order to understand global migration.

3. Methods and Materials

The study was conducted within the framework of educational design research (EDR)–a versatile approach that has been labelled as interventional, innovative and theory testing (Eilks & Ralle, 2002; van den Akker, 2013). EDR is often associated with the research of Brown (1992) and Collins (1990), whose aim was to leave experimental settings within universities to explore how effective teaching could be designed and evaluated in the classroom. Since then, EDR has become one of the most prominent methodologies to bridge the gap between theory and practice and to bring about successful educational innovations (Gravemeijer & Cobb, 2006).

EDR has been labelled with five characteristics (McKenney et al., 2006); it is: (1) interventionist, i.e., researchers intervene–together with teachers–in teaching and learning processes in order to reshape or influence learning outcomes; (2) iterative,

i.e., the design process consists of cycles of design, testing and evaluation; (3) process-oriented, i.e., it has learning processes as its focal point (including the means to stimulate those processes); (4) utility-oriented, i.e., knowledge outcomes from research should be directly useful for teachers in actual educational settings; and (5) theory-oriented, i.e., education is designed on the basis of theoretical assumptions and contributes to theory building. Nonetheless, however promising and prominent EDR has seemed when described in the literature, it has also been criticized for lacking a common 'grammar' for explaining what the interventions contribute with in terms of knowledge. Furthermore, one limitation that is often emphasized has also been the lack of framing related to what is being studied in the processes, and the methodology, which is challenging in terms of time for both researchers and practitioners (Akkerman et al., 2013; Cobb et al., 2015).

Beginning with a larger study on young people's understanding of global migration (Sandahl & Dessen Jankell, 2018), the researcher reached out to a network of social studies teachers who were connected to a professional development program, asking if they were interested in taking part in a research study on global migration within geography education. Through snowballing (Biernacki & Waldorf, 1981), the researcher made contact with a dozen teachers at various levels of the educational system. However, only one teacher from the middle-school level showed interest, which became important in the selection process with regard to the lack of research on younger children in geography education (Segall & Helfenbein, 2008; Bladh, 2014). After the researcher had explained the procedures of an EDR during an initial meeting, the teacher agreed to participate in the study with her grade 6 class (12-year-olds), thus enabling the very foundation of an EDR: a collaborative process between researcher and practitioner. Below are some brief descriptions of the project steps, and then the outcomes are analyzed in the following section.

3.1 The Steps of the EDR

In short, the process of EDR can be summarized in four steps: (1) Identifying an educational challenge; (2) Identifying possible means and interventions to overcome that challenge–derived from theory (researcher) and professional experience (teacher)–and developing of a teaching prototype; (3) Testing and evaluating the prototype; and (4) designing principles derived from the outcome of the prototype (Reeves, 2006; van den Akker, 2013). This study was planned and performed in line with the first three steps of an EDR as the project lacked an iterative process. Therefore, it is possible to analyze changes in students' understanding of migration but more difficult to formulate design principles that can be directly useful for teachers. However, the learning outcomes are discussed below in relation to the teaching, based on observations in class, the assessment tasks and discussions with the teacher after the lesson plan was finalized. The outcomes in relation to powerful knowledge are discussed in the final section.

The *first* step involved the identification of challenges faced by students. The researcher and the middle-school teacher met on three occasions to discuss general social studies teaching, and geography teaching in particular. The teacher did not identify as a geography teacher *per se* and was concerned about her lack of subject knowledge. Still, she was interested in developing students' conceptual understanding of geography and read through a suggested book on global migration (Goldin et al., 2011). Migration was not a typical curricular item, but was something the teacher believed to be a pressing issue in society and something that would engage her students. The researcher presented preliminary results from a larger study, where students (aged 15–17) had given written accounts of their understanding of migrants, answering questions about who the migrants were, where they were coming from, where they were going and the consequences of migration. These questions were elicited (Barton, 2015) through a graph of the global number of migrants between 2000 and 2015 (increasing from 173 million to 244 million), based on UN statistics (UN, 2017). The most prominent understanding displayed among older students (15–18) was that migrants were refugees, fleeing from political oppression and war. They were perceived to come from the Middle East (particularly Syria), and it was assumed that their aim was to come to Europe in search of a safer life (Sandahl & Dessen Jankell, 2018).

The teacher was not surprised by these results, but she had not asked such questions of her own class yet. Thus, she suggested that we try the same question to determine whether her students held the same perceptions. In order to analyze the answers and identify the challenges, the teacher and researcher examined the students' answers using the typology presented in the theoretical section. The students' level of knowledge on migration was discussed, along with their use of appropriate substantive concepts and their understanding of and knowledge about places, as well as migration on different scales.

The *second* step used these analyses to generate interventions in order to create a teaching prototype. Van den Akker (2013) has described the curriculum items necessary for this process, i.e., the components of planning with respect to goals, content, materials, time and assessment. In collaboration, the teacher and researcher planned accordingly and constructed learning goals involving all three types of geographical knowledge: contextual content, key substantive concepts, and learning activities in which students were expected to practice and use the geographical thinking concepts of place and scale. The researcher suggested materials and prototypes for learning activities, and the teacher used her experience and knowledge of the group to find the appropriate level for those particular students. Overall, all the planning was conducted during the researcher and teacher interaction.

The *third* step, evaluating the prototype, was connected to the assessment, which contained the same questions as the pre-test and thus made it possible to evaluate the students' changed understanding of migration. In addition, the researcher observed teaching during lessons 5–9, when the students were examining patterns of migration on different scales in group work. After each lesson, the researcher and teacher sat down to compare notes from the lessons. The assessment was analyzed using the same theoretical design as in step 1.

4. Results

4.1 Identifying Challenges

The elicitation task was based on a graph of UN statistics, as described above. The students were asked to respond to three questions: (1) who were the migrants? (2) where were they coming from? and (3) where were they going? The task was somewhat simplified by omitting the question about causes and consequences. Still, the expectation was the same–that the pre-test would give a fair picture of how nuanced and correct students' understanding of migration was. The pre-test was distributed by the teacher during a lesson four weeks before teaching began. It revealed similar patterns as when the task was performed by older students, i.e., there was a dominant narrative in which migrants were seen as refugees, fleeing from places of war (especially Syria) to safe havens in Europe (especially Sweden). However, these younger students seemed to rely more on their *everyday geographies* (Catling & Martin, 2011), invoking examples from family and friends, and thus giving more examples of pull factors such as labour and love (the older students tended to be more academic and rely less on personal experience; see Sandahl & Dessen Jankell, 2018). The researcher and teacher made a joint qualitative analysis of students' perceptions in the 21 written accounts in order to identify deficiencies in relation to the idea of what might be considered powerful geographical knowledge, i.e., contextual, substantive and procedural knowledge, as proposed by Lambert (2016).

Firstly, the students showed a lack of *content knowledge* regarding migration patterns and processes, e.g., geographical data. Typical answers demonstrating shortcomings in students' thinking can be represented in the following two quotes:

> They come from all over and go wherever they want. They move from everywhere. (P8)
>
> I think that refugees for instance move around a lot to places where they feel rather welcomed. (P1)

Even though students often gave examples of processes and patterns, many also painted a very general picture of migration. The excerpts above are rather characteristic, with the first (P8) having no idea about specific migration, and believing that people just seem to migrate randomly. Many students did see patterns, but lacked a systematic way of describing them. In this sense, the second quote (P1) describes a pattern based on everyday thinking, where people at least have certain aims and their destination is not random. This lack of content knowledge, beyond their own experiences, is closely connected to the second aspect.

Secondly, a lack of *substantive concepts*: students lacked a geographical vocabulary to explain migration, e.g., concepts such as push–pull, globalization etc. Representative answers showing this can be seen in the following quotes:

> I believe that immigrants come from war-torn countries, but also businessmen who come from all kinds of places. (P7)
>
> Refugees leave their countries because of war (e.g., Syria) or that they don't have water or food. Others move because they want a better job in another country and others move just to see new places. (P18)

These kinds of answers were more precise in their descriptions of patterns and processes, but they lacked a geographical way of describing them. The first example (P7) displays an understanding that there are several reasons for migrating, but does not have the vocabulary to describe concepts such as globalization. A reasonable explanation is, again, that students are using their own experiences and describing situations where they have met foreign-

ers who work in Sweden (the school is in a city where industry is dominated by a high-tech international corporation with many employees from other countries). The second quote (P18) was also quite characteristic – naming many reasons for migration but not separating different kinds of causes in terms of push and pull factors. Again, these students demonstrated a lack of geographical concepts.

Thirdly, a lack of *procedural concepts*: students struggled with causality (often giving only one example), place (the particular settings of migration) and scale (local, regional and global patterns).

> They come from countries of war and are going to countries where there is peace. They end up everywhere in Sweden. (P11)
>
> I would probably say that they typically come from Africa and Asia and that they are going to Europe and the USA. (P17)

Consequently, students' ideas of migration were based on everyday understandings rooted in their own life-world experiences, but they were not able to specify important aspects of place or see that there might be other patterns than the one they perceived in their local context. However, this does not mean that students were generally ignorant about migration. On the contrary, they all had ideas on migration and migrants and gave a variety of examples, as described above, not just of war and struggle as reasons for migration.

4.2 Teaching Interventions

To address these challenges, a module consisting of nine lessons was planned (see Fig. 1), with the learning goal of being able to *analyze migration using geographical data on different scales (local-national-global) and connecting migration patterns to places*. Since migration was not an item in the curriculum, no textbook was available. In order to give context to the students, the researcher wrote an 18-page booklet (2,647 words) containing content knowledge on migration and an introduction to key substantive concepts. The text, which was reviewed by the teacher, presented the history of migration (focusing on mass migration from the 1800s to the present), push and pull migration, migration patterns and the consequences of migration for both originating and receiving countries (e.g., brain-drain, remittances, laborers), and highlighted key concepts. The text ended with the introduction of two procedural concepts: scale and place–concepts that were used in the tasks. In addition, the text highlighted geographical evidence, i.e., the kinds of data that geographers use.

The main objective of the module was to encourage students to actively use evidence, scale and place to increase their understanding of migration. In order to facilitate this, the researcher and teacher generated two specific tasks designed to practice the use of place and scale. The first task focused on place, with students using a factsheet to compare the differences and similarities between two well-known local places: a small town and the largest city in the region. In this task, students were asked to explain why people might move from the small town to the city and label the reasons as push or pull factors. The second task focused on scale, with students receiving statistical data on median life expectancy, average income and average age at different scales, i.e., local, national and global, in Sweden and India. The example countries were chosen to highlight the differences in different contexts, e.g., the local-national numbers are similar in Sweden, but display much greater differences in India.

The lessons and smaller tasks were followed by a group assignment. In lessons 5–7, students worked with a kit of migration facts giving them information about the inflow and outflow of migrants for the region's largest city and for Sweden as a nation (derived from the National Agency of Swedish Statistics, SCB). Each migrant group was tagged with a flag, and each place of origin and destination was briefly described by its main characteristic (i.e., important push or/and pull factors). Using this information and arrows, students were asked to create a map of migration patterns at a local or national scale, according to the specific set of information they had received. Students were also asked to write a concluding note on each specific migration movement in order to summarize the main inference that might explain the movement in or out of the local or national level. The end product that each group was expected to generate can be seen in Fig. 2.

When the map was completed, the students were asked to write a summary containing a description of the migration at their specific level and a conclusion about it. The conclusion was formulated in the group and copied so that each member had a copy of their own. In mixed groups, students then compared their local and national contexts to describe differences and similarities using a Venn diagram. The work in mixed groups was finalized with a written summary, where the results from the Venn diagram were noted.

The final lesson focused on global migration patterns, with each group being assigned a specific continent and provided with information (derived from UN statistics; see UN, 2017) presenting them with facts about the total number of migrants, the origin and destination of the largest mi-

grant groups and the proportion of refugees and economic migrants from each continent. A description of salient features in relation to place and migration was also provided for each continent. Each group received a world map and was asked to summarize their information on the map and show migration patterns by adding arrows (and the percentage of migrants) from their assigned continent. The template can be seen in Fig. 3.

When the students had finalized their own continent, the teacher projected the template onto the whiteboard and asked the class to send one member from each group to present their findings. These students came up to the whiteboard, filled in their information, and added arrows and percentages to the map in the specific color representing their continent. Students in other groups finalized their own template until the template was complete with information about all six continents. Students were asked to compare continents to observe differences and similarities and to compare world migration with their findings from the local and national levels.

4.3 Learning Outcome

The learning outcome was evaluated continuously throughout the nine lessons, particularly by the teacher. In order for the students' progression to be monitored, they were asked to answer the same three questions (elicited by using the same graph) they had answered before the teaching began. Using the three theoretical types of geographical knowledge made it possible to evaluate the learn-

Lesson(s)	Time (min.)	Lesson content and activities	Type of powerful geographical knowledge introduced in teaching
1	60	Work through the booklet together in class, pages 1–9. Teacher reads aloud and stops to make a note of key concepts on the whiteboard. Place task. Push and pull task.	Contextual knowledge Substantive knowledge Procedural knowledge
2	60	Work through the booklet together in class, pages 10–15. Teacher reads aloud and stops to make a note of key concepts on the whiteboard. Pupils use key concepts to create a mind-map (in pairs). Pupils summarize the text orally using their mind map (in groups).	Contextual knowledge Substantive knowledge
3	40	Work through page 16 (on scale). Introduction to scale task and undertaking it (in pairs).	Substantive knowledge Procedural knowledge
4	60	Debriefing about scale task. Rehearsal of key concepts.	Procedural knowledge Substantive knowledge
5, 6, 7	140	Using geographical evidence to examine local and national contexts of migration using scale and place (group work). Writing a summary. Debriefing about summary.	Procedural knowledge
8, 9	100	Mixed groups: comparing local and national contexts. Writing a comparative summary. Using geographical evidence to examine local and national contexts of migration using scale and place (group work). Debriefing about global contexts.	Procedural knowledge

Fig. 1. Overview of the teaching prototype with learning activities (Source: author)

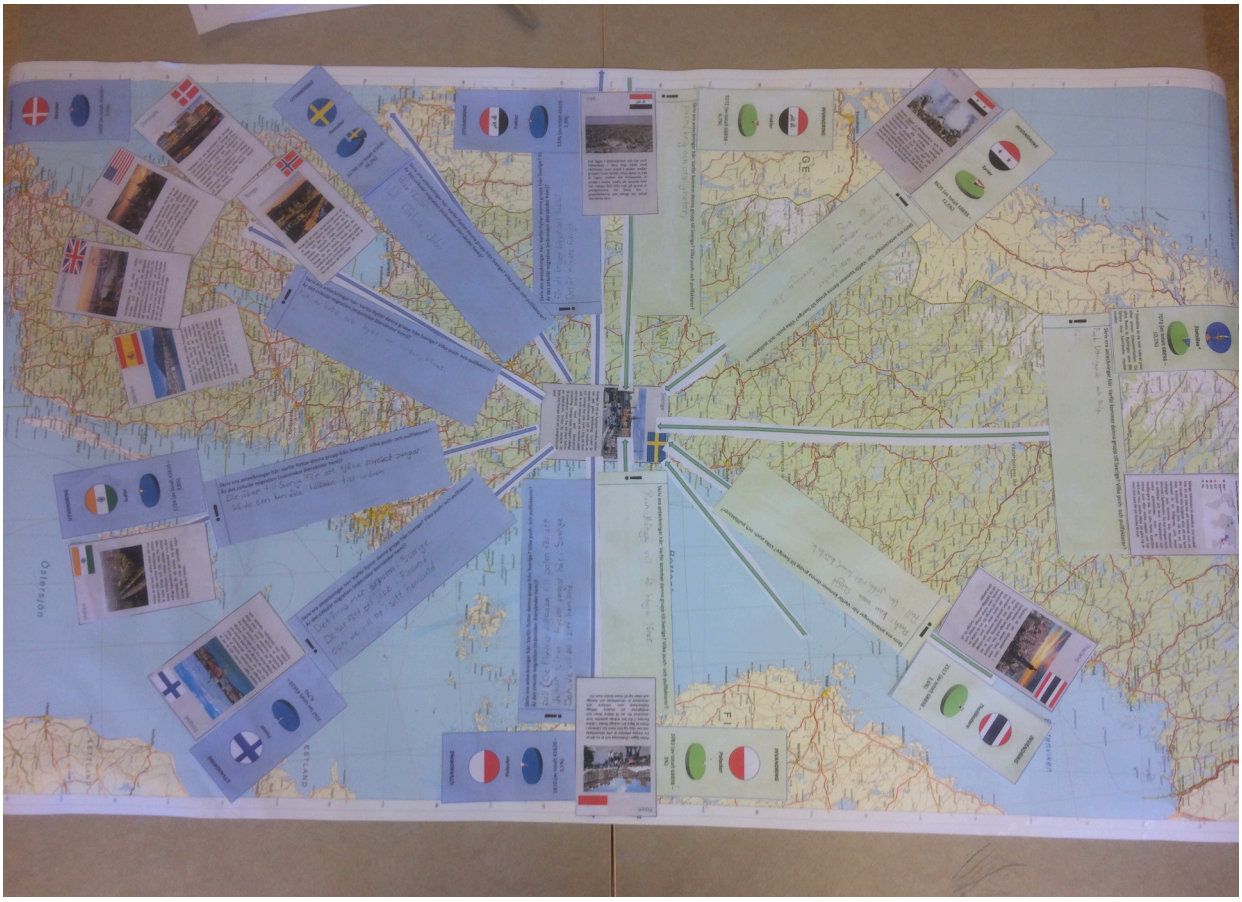

Fig. 2. The finished map of migration patterns in Sweden created by one of the groups (Source: author)

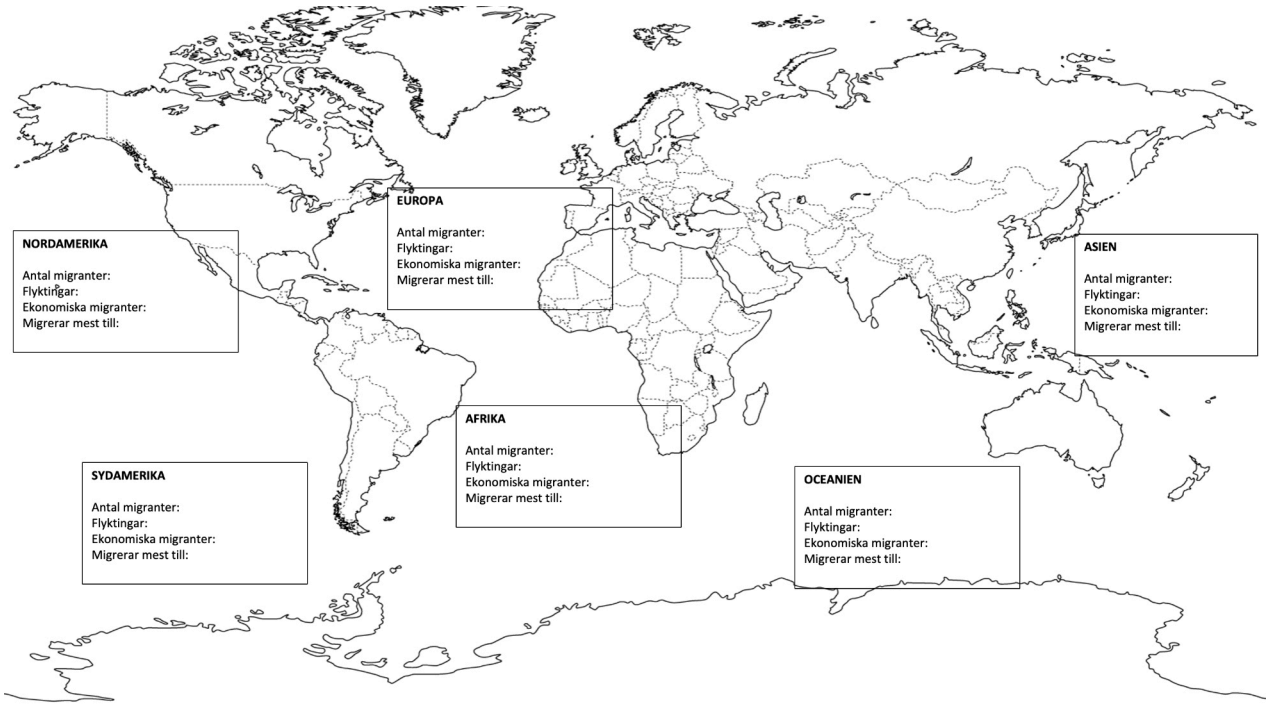

Fig. 3. The template for global migration patterns (Source: author)

ing outcome in students' written answers after the teaching.

Unsurprisingly, working with migration on different scales and becoming acquainted with content knowledge about migration during the nine lessons had improved the students' understanding. The understanding displayed before the classes, where migration was seen as something random and dominated by a view of migrants as refugees, was no longer prevalent after the classes. One of the students described her understanding in the following way:

> The most common migrants are economic migrants. That is, they move in order to get better jobs or educate themselves. Asia has the most refugees in the world, but still they have many more economic migrants than refugees. Migrants move because of different reasons. Some are refugees, some want a better life, some move because of love or even to retire in a sunny country. (P5)

Even though the students had engaged with Swedish migration statistics, where refugees are rather common in both local and national contexts, their new understanding allowed them to see migration as rather complex and possible to distinguish in terms of patterns and processes. The student above (P5) understood that migrants could be refugees, but that the most common migrant is the person migrating for economic reasons. This new understanding, describing the complexity and multiplicity in causality, was a clear outcome of the teaching. Another student summarized his understanding in the following way:

> People leaving their home country leave because of wars, the possibility of a better job, a new climate or just a new culture. They might live in a country with bad standards of living or they may have fallen in love with someone in another country. So, there are a lot of different reasons why people migrate. […] The most common reason for people to migrate is to get better jobs and leave poverty behind. Many send remittances to their families when they are away – like many Indian people do when they work in Saudi Arabia. So, people move from poorer India to Saudi Arabia. It's not only good. India also lost a lot of educated people. This is called brain drain. People coming to Sweden do that because it is good here. Sweden has a lot of pull factors like work opportunities. (P6)

This student displayed an understanding very different from that before teaching. People migrate due to various reasons, and migration is not random – it follows a pattern whereby some countries or regions attract migrants looking for better opportunities that might not be present in their originating countries. Furthermore, this student (P6) uses a geographical vocabulary to describe this new understanding, and substantive concepts were generally visible in the students' new understanding after teaching. The following answer can serve as an illustrative example of a student using geographical concepts in his new understanding:

> Migrants can be refugees who are leaving because of war (push factor) or because they want better jobs and possibilities (pull factors). Many do what is called circular migration. First they emigrate (leave) their home country and immigrate (move in) to a new country […] When they have earned money or the war is over they return to their own country. When they are away they do something called remittances which means that they send money home to their family in the country they come from. Also, many people migrate within countries. The most common reason is to move to a city to find jobs. Moving from the countryside to a city is called urbanization. (P10)

Using the concepts provided during the lessons is, in many cases, also a way for students to show the teacher that they are doing what is expected of them in what Shemilt (2018) has labelled a 'classroom game'. However, the post-teaching answers display the students using concepts rather freely in their answers – not all of them explain the meaning of the concepts in detail as in the example above. Concepts such as push and pull factors, circular migration, remittances and urbanization had been integrated into the students' way of understanding migration in a new way.

More importantly, the introduction of the core geographical procedural concepts of place and scale is noticeable in students' answers. The student below (P6) links migration patterns to specific places:

> People who move within Sweden are mostly people looking for new jobs in big cities but also old people who move to Spain and other countries with good climates. If you look at the world there are a lot of refugees and poor people. But it depends on where you are. In Oceania and North America for instance there are almost no wars so people aren't refugees there in the same way. (P6)

Here, the student displays an understanding that people in Sweden are attracted to the professional opportunities that cities offer in terms of jobs, and that senior citizens are moving to countries like Spain when they retire because of their warmer climate. The understanding of places is also demonstrated when the student indicates that it is important to distinguish between what places you are discussing–at a general level, there are many people migrating because of war and poverty, but that is not the case everywhere. In his answer, it is also significant that this student deploys an understanding of scale, i.e., understanding different patterns in local, national and global contexts. The following student uses scale more clearly:

> There are a lot of different migrants. They might leave because of war or because you have family in the new country. Most people migrate because of jobs and it is not just good since it creates brain drain because they lose a lot of educated people. If you look at our city there are mostly people coming in from the countryside […] Many also leave [our city] to go to bigger cities. In Sweden a lot of peo-

> ple move in because they are coming as refugees and also many people are looking for jobs. People also move from our country to find better jobs like in Norway. In the world people look for jobs, but there are also refugees. So altogether you can say that a lot of people move to get better jobs. (P14)

This student distinguishes between different scales in the form of local, national and global contexts and even infers that, although there are differences, there is a common denominator in all of these contexts – migrating due to economic factors, such as better jobs.

5. Discussion

The aim of this article was to examine the teaching and learning of two essential geographical thinking concepts–scale and place–in middle school, and to investigate how teaching can be designed to promote geographical understanding of global migration. The pre-test revealed that the middle-school students followed a familiar pattern: understanding global migration as people fleeing from war and seeking refuge in European countries (Castles, 2010; Sandahl & Dessen Jankell, 2018), probably influenced by media coverage of refugees (Bello, 2015; Cangià, 2016). Still, these younger students also relied on personal experience and gave quite accurate descriptions in the sense that they also included other reasons for migrating, e.g., job opportunities and love. However, after nine lessons in which the students engaged with texts and learning activities, they demonstrated a very different narrative. Now, they showed better contextual understanding, the ability to use key concepts and engage with geographical thinking concepts in a way that previous research has shown to be successful in countering media narratives and offering disciplinary tools (Ryan, 2012; Cox et al., 2019, 2020).

The argument in this article is that the teaching design, although rather traditional, became important in changing students' understanding of global migration and that they acquired a more powerful understanding of the world through what geography education has conceptualized as *powerful geographical knowledge* (Lambert, 2016; Maude, 2018; Taylor, 2018). The question is: what kind of knowledge did the students acquire in terms of Lambert's (2016) typology, and what can be argued to be particularly powerful?

Firstly, students' new understanding of global migration reflected the evidence we have from migration data, whereby most migrants can be labelled as economic migrants moving in patterns to find better opportunities in other places. These patterns are not random and are often circular, with migrants moving for a short period of time and sending remittances home to their families. This new contextual knowledge changed students' perceptions and gave them a more accurate understanding of migration as a whole, which can be argued as being of more explanatory value when they encounter discussions and news about migration. Notably, even though the Swedish experience after the war in Syria reflected a disproportionately high number of refugees compared to labour migrants, the students articulated conclusions that explained global migration rather than the local and national context and, in many cases, shifted their arguments in relation to scale. In this sense, the new factual knowledge can be seen as powerful because it gives students facts that contradict everyday knowledge in the sense that they are evidence based (Lambert, 2017).

Secondly, the students' new understanding was related to the use of substantive concepts that helped them to organize their knowledge in new ways; such as push and pull factors, remittances and circular migration. As they acquired substantive knowledge and began to use significant geographical concepts, their everyday vocabulary was changed towards a more specific and abstract terminology–connecting their understanding to a system of thought that is based on the academic discipline of geography. These concepts are perhaps not powerful *per se*, but they do give students opportunities to produce denser descriptions in ways that everyday language does not. It is clear in students' statements after the lessons that they attribute meaning to the concepts in a way that is crucial for their new understanding and can be considered powerful.

Thirdly, the use of scale and place became an important part of this new understanding, not just as substantive concepts but as procedural knowledge. The students' active engagement with the concepts highlighted the importance of places and their characteristics and role in creating patterns, and also highlighted the importance of differentiating between local, national and global scales. Here, the initial tasks performed by the teacher clearly indicated that scale and place are not just to be seen as substantive concepts, but also as procedural ones. When the students later engaged with the final tasks, to explain patterns of migration in local, national and global contexts, their active use of procedural concepts became an important part of their arguments, changed their way of understanding migration and provided in-

sights into the system of thought of geography as a discipline (Lambert, 2017).

Each of these knowledge types thus had an important role to play in relation to 'powerful geographical knowledge'. It can be argued that they are all important in developing students' understanding of geographical issues and that they became intertwined in the classroom when the students engaged with migration. Still, this study provides some evidence that students' reasoning was particularly changed by their active engagement with the procedures of geographical thinking, i.e., what scholars in geography education have described as an important feature in linking content with overarching ways to organize the discipline (Leat, 1998; Jackson, 2006; Clifford et al., 2009; Jones & Lambert, 2018; Taylor, 2018; Maude, 2018, 2022; Catling, 2021; Dessen Jankell et al., 2021). This does not mean that procedural knowledge in Lambert's (2016) typology equates with powerful geographical knowledge, but rather that it plays a crucial role if we want to design teaching that develops students' understanding in ways that can be considered powerful.

Even though disciplinary knowledge is important, it can be argued that it does not stand alone in a didactic or pedagogical setting. Students' statements before, during and after the teaching included their own understanding of the world and how they tried to create both sense and meaning out of migration, by integrating their new understandings into their everyday geographies (Catling & Martin, 2011), which provides the foundations for agency in geographical learning. During this process, the engagement and approach of the teacher, to allow the students to engage actively with a geographical problem that they had encountered in their everyday experiences, were crucial (cf. Catling, 2021; Blanck, 2021).

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References

Akkerman, S. F., Bronkhorst, L. H., & Zitter, I. (2013). The Complexity of Educational Design Research. *Quality & Quantity – International Journal of Methodology*, *47*(1), 421–439.

Barton, K. C. (2015). Elicitation Techniques: Getting People to Talk About Ideas They Don't Usually Talk About. *Theory and Research in Social Education, 43*(2), 179–205.

Bello, V. (2015). Inclusiveness as Construction of Open Identity: How Social Relationships Affect Attitudes Towards Immigrants in European Societies. *Social Indicators Research, 126*(1), 199–223.

Béneker, T., & van der Vaart, R. (2020). The Knowledge Curve: Combining Types of Knowledges Leads to Powerful Thinking. *International Research in Geographical and Environmental Education, 29*(3), 221–231.

Biddulph, M., & Lambert, D. (2017). Making Progress in School Geography: Issues, Challenges and Enduring Questions. In O. Muñiz-Solari, M. Solem & R. Boehm (eds.), *Learning Progressions in Geography Education: International Perspectives* (pp. 35–54). Springer International.

Biernacki, P., & Waldorf, D. (1981). Snowball Sampling: Problems and Techniques of Chain Referral Sampling. *Sociological Methods & Research*, *10*(2), 141–163.

Bladh, G. (2014). Geography Education in Sweden: Swedish Geography Teachers Subject Knowledge. Paper Presentation at *IGU Regional Conference*, Krakow, August 2014.

Bladh, G., Stolare, M., & Kristiansson, M. (2018). Curriculum Principles, Didactic Practice and Social Issues: Thinking Through Teachers' Knowledge Practices in Collaborative Work. *London Review of Education*, *16*(3), 398–413.

Blanck, S. (2021). Teaching about Migration: Teachers' Didactical Choices when Connecting Specialized Knowledge to Pupils' Previous Knowledge. *Journal of Social Science Education, 20*(2), 70–102.

Brown, A. L. (1992). Design Experiments: Theoretical and Methodological Challenges in

Creating Complex Interventions in Classroom Settings. *The Journal of the Learning Sciences*, *2*(2), 141–178.

Cangià, F. (2016). Emotions and Symbolic Boundaries: Reflections on Youths' Views about Migration in Italy. *Ethnic and Racial Studies*, *40*(10), 1720–1738.

Catling, S. (2021). The Challenge of Geography for Primary Children. *Zeitschrift für Geographiedidaktik | Journal of Geography Education, 49*(4), 166–182.

Catling, S., & Martin, F. (2011). Contesting *Powerful Knowledge*: The Primary Geography Curriculum as an Articulation between Academic and Children's (Ethno-)Geographies. *The Curriculum Journal*, *22*(3), 317–335.

Castles, S. (2010). Understanding Global Migration: A Social Transformation Perspective. *Journal of Ethnic and Migration Studies*, *36*(10), 1565–1586.

Clifford, N., Holloway, S., Rice, S., & Valentine, G. (Eds.) (2009). *Key Concepts in Geography*. Sage.

Cobb, P., Jackson, K., & Sharpe, C. (2015). Design Research: An Analysis and Critique. In L.D. English & D. Kirshner (eds.), *Handbook of International Research in Mathematics Education* (pp. 481–503). Routledge.

Collins, A. (1990). Toward a Design Science of Education. *Technical Report 1*, 15–22.

Cox, M., Elen, J., & Steegen, A. (2017). Systems Thinking in Geography: Can High School Students do it? *International Research in Geographical and Environmental Education*, *28*(1), 37–52.

Cox, M., Elen, J., & Steegen, A. (2019). The Use of Causal Diagrams to Foster Systems Thinking in Geography Education: Results of an Intervention Study. *Journal of Geography*, *118*(6), 238–251.

Cox, M., Elen, J., & Steegen, A. (2020). Fostering Students' Geographic Systems Thinking by Enriching Causal Diagrams with Scale: Results of an Intervention Study. *International Research in Geographical and Environmental Education*, *29*(2), 112–128.

Cresswell, T. (2008). Place: Encountering Geography as Philosophy. *Geography, 93*(3), 132–140.

Cresswell, T. (2015). *Place: An Introduction.* Wiley-Blackwell.

Dessen Jankell, L., Sandahl, J., & Örbring, D. (2021). Organising Concepts in Geography Education: A Model. *Geography*, *106*(2), 66–75.

Eilks, I., & Ralle, B. (2002). Participatory Action Research in Chemical Education. In B. Ralle & I. Eilks (eds.), *Research in Chemical Education: What Does This Mean?* (pp. 89–98). Shaker.

Goldin, I., Cameron, G., & Balarajan, M. (2011). *Exceptional People: How Migration Shaped Our World and Will Define Our Future*. Princeton University Press.

Goldin, I., & Reinert, K. A. (2012). *Globalization for Development: Meeting New Challenges*. Oxford University Press.

Golser, K., Hintermann, C., Marso, K., & Uhlenwinkel, A. (2019). „Flüchtling", „Migrant/in" und Co: Sprachbewusstheit im Migrationsdiskurs mittels Wertequadraten. *GW Unterricht*, *154*(4/2019), 41–53.

Gravemeijer, K., & Cobb, P. A. (2006). Design Research from a Learning Design Perspective. In J. van den Akker, K. Gravemeijer, S. McKenney & N. Nieveen (eds.), *Educational Design Research* (pp. 17–51). Routledge.

Hainmueller J., & Hiscox M. J. (2007). Educated Preferences: Explaining Individual Attitudes Toward Immigration in Europe. *International Organization*, *61*(2), 399–442.

Jackson, P. (2006). Thinking Geographically. *Geography*, *91*(3), 199–204.

Jones, M., & Lambert, D. (eds.) (2018). *Debates in Geography Education*. Routledge.

Lambert, D. (2011). Reframing School Geography: A Capability Approach. In G. Butt (ed.), *Geography, Education and the Future* (pp. 127–140). Continuum.

Lambert, D. (2014). Curriculum Thinking, Capabilities and the Place of Geographical Knowledge in Schools. *Journal of Japanese Educational Research Association for the Social Studies*, *81*, 1–11.

Lambert, D. (2016). Geography. In D. Wyse, L. Hayward, & J. Z. Pandya (eds.), *The SAGE Handbook of Curriculum, Pedagogy and Assessment* (pp. 391–407). Sage.

Lambert, D. (2017). Powerful Disciplinary Knowledge and Curriculum Futures. In N. Pyyry, L. Tainio, K. Juuti, R. Vasquez & M. Paananen (eds.), *Changing Subjects, Changing Pedagogies: Diversity in School and Education, Studies in Subject Didactics 13* (pp. 14-33). Finnish Research Association for Subject Didactics.

Lambert, D., & Morgan, J. (2010). *Teaching Geography 11–18: A Conceptual Approach.* McGraw Hill/Open University Press.

Leat, D. (1998). *Thinking through Geography*. Chris Kington.

Marsden, B. (1997). On Taking the Geography out

of Geographical Education: Some Historical Pointers. *Geography, 82*(3), 241–252.

Maude, A. (2016). What might Powerful Geographical Knowledge Look like? *Geography*, *101*(2), 70–76.

Maude, A. (2018). Geography and Powerful Knowledge: A Contribution to the Debate. *International Research in Geographical and Environmental Education*, *27*(2), 179–190.

Maude, A. (2022). Using Geography's Conceptual Ways of Thinking to Teach about Sustainable Development. *International Research in Geographical and Environmental Education*, *32*(1), 4–19.

McKenney, S., Nieveen, N., & van den Akker, J. (2006). Design Research from a Curriculum Perspective. In J. van den Akker, K. Gravemeijer, S. McKenney & N. Nieveen (eds.), *Educational Design Research* (pp. 67–90). Routledge.

McNeill, J. R., & McNeill, W. H. (2003). *The Human Web: A Bird's-Eye View of World History*. Norton & Company.

Mella, O. (2011). Mångfaldsbarometern: Sju år av attitydmätningar [The Plurality Barometer: Seven Years of Measuring Attitudes]. *Sociologisk forskning, 48*(4), 45–53.

Montello, D. R. (2001). Scale. In N. J. Smelser & P. B. Baltes (eds.), *International Encyclopedia of the Social and Behavioral Sciences* (pp. 13,501–13,504). Pergamon Press.

Morgan, J. (2011). Knowledge and the School Geography Curriculum: A Rough Guide for Teachers. *Teaching Geography*, *36*(3), 90–92.

OECD, ILO, IOM, & UNHCR (2019). *International Migration and Displacement Trends and Policies Report to the G20*. OECD, ILO, IOM, & UNHCR.

Rawling, E. (2018). Place in Geography: Change and Challenge. In M. Jones & D. Lambert (eds.), *Debates in Geography Education* (pp. 49–61). Routledge.

Reeves, T. (2006). Design Research from a Technology Perspective. In J. van den Akker, K. Gravemeijer, S. McKenney & N. Nieveen (eds.), *Educational Design Research* (pp. 52–66). Routledge.

Roberts, M. (2010). What is 'Evidence-Based Practice' in Geography Education? *International Research in Geographical and Environmental Education*, *19*(2), 91–95.

Roberts, M. (2013). *Geography through Enquiry: Approaches to Teaching and Learning in the Secondary School*. Geographical Association.

Roberts, M. (2014). Powerful Knowledge and Geographical Education. *The Curriculum Journal*, *25*(2), 187–209.

Roberts, M. (2022). Powerful Pedagogies for the School Geography Curriculum. *International Research in Geographical and Environmental Education, 32*(1), 69-84.

Ryan, V. (2012). Teaching about Migration in an International School? *International Schools Journal, 32*(1), 40–44.

Sandahl, J. (2015). Preparing for Citizenship: The Value of Second Order Thinking Concepts in Social Science Education. *Journal of Social Science Education, 14*(1), 19–30.

Sandahl, J., & Dessen Jankell, L. (2018). Powerful Geographical Knowledge and Students' Understanding of Global Migration in Times of 'Crises'. Paper presented at the *American Educational Research Association (AERA),* New York, 13–17 April 2018. AERA.

Segall, A., & Helfenbein, R. J. (2008). Research on K-12 Geography Education. In L. S. Levstik & C. A. Tyson (eds.), *Handbook of Research in Social Studies Education* (pp. 259–283). Routledge.

Seixas, P., & Morton, T. (2013). *The Big Six Historical Thinking Concepts*. Nelson Education.

Shelley, F., Pringle, D., & Agnew, J. A. (2003). Classics in Human Geography Revisited. *Progress in Human Geography, 27*(5), 605–614.

Shemilt, D. (2018). Assessment of Learning in History Education: Past, Present, and Possible Futures. In S. A. Metzger & L. McArthur Harris (eds.), *The Wiley International Handbook of History Teaching and Learning* (pp. 449–471). John Wiley & Sons.

Skarstein, F., & Wolff, L-A. (2020). An Issue of Scale: The Challenge of *Time*, *Space* and *Multitude* in Sustainability and Geography Education. *Educational Sciences, 10*(28), 1–18.

Taylor, L. (2009). *Think Piece: Concepts in Geography*. Geographical Association.

Taylor, L. (2018). Making Progress in Learning Geography. In M. Jones & D. Lambert (eds.), *Debates in Geography Education* (pp. 89–102). Routledge.

UN (United Nations) (2017). *International Migration Report 2017: Highlights (ST/ESA/SER.A/404)*. United Nations, Department of Economic and Social Affairs, Population Division.

UN (United Nations) (2022). *World Migration Report 2022*. International Organization for Migration (IOM).

van den Akker, J. (2013). Curricular Development Research as a Specimen of Educational Design Research. In T. Plomp & N. Nieveen (eds.),

Educational Design Research (pp. 52–71). Netherlands Institute for Curriculum Development.

van Klingeren, M., Boomgaarden, H. G., & de Vreese, C. H. (2017). Will Conflict Tear us Apart? The Effects of Conflict and Valanced Media Messages on Polarizing Attitudes Toward EU Immigration and Border Control. *Public Opinion Quarterly, 81*(2), 543–563.

Young, M. (2008). *Bringing Knowledge Back in: From Social Constructivism to Social Realism in the Sociology of Education*. Routledge.

Young, M. (2013). Overcoming the Crisis in Curriculum Theory: A Knowledge-Based Approach. *Journal of Curriculum Studies, 45*(2), 101–118.

Young, M., & Muller, J. (2013). On the Powers of Powerful Knowledge. *Review of Education, 1*(3), 229–250.

Author

Associate Professor Dr. Johan Sandahl

Stockholm University
Department of Teaching and Learning
106 91 Stockholm, Sweden
johan.sandahl@su.se