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Curriculum contexts, recontextualisation and attention for higher-order thinking

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Abstract

Tasks are crucial for gaining access to powerful knowledge in geography and for fostering higher-order thinking in lessons; therefore, they are key to subject-specific pedagogy. After analysing tasks in geography textbooks for upper secondary education, it was revealed that higher-order thinking barely occurs in textbooks in the Netherlands and is more frequent in North Rhine-Westphalia, Germany. Subsequently, both curriculum contexts were systematically compared to determine factors that influence the use of tasks. The results show that evaluative rules play a crucial role. The assessment in North Rhine-Westphalia focuses on higher-order thinking and how this becomes visible in students' work. Dutch assessment concentrates on students handling an outlined body of knowledge in defined settings. This raises questions of epistemic access, as students are less prepared for the skills expected at university level. Finally, we observed the importance of alignment between official institutions, the discipline of subject-specific pedagogy and support for teachers when it comes to fostering higher-order thinking in geography education.

Keywords: recontextualization, higher-order thinking tasks, curriculum contexts, powerful knowledge

Introduction

Tasks are a powerful tool for geography teachers, as they enable students to engage with the subject (Kleinknecht, 2010). Accordingly, geography teachers use tasks for more than 40 per cent of lesson time, of which textbook tasks form a substantial share (Krause et al., 2017). One of the criteria that tasks should fulfil in geography lessons is the development of competences (Krause et al., 2021b). A distinction often made in this respect is between lower- and higher-order thinking. Lower-order thinking focuses on knowledge reproduction and application, whereas higher-order thinking is characterised as a process in which knowledge is consciously and actively processed with a certain purpose, and which involves both critical and creative reflection (Maude and Caldis, 2019). Higher-order thinking tasks foster these learning processes because they invite students to integrate complex information into existing knowledge structures. By doing so, students develop a conceptual understanding of the subject, which enables them to judge information critically and to participate in public debates, giving them, in other words, access to powerful knowledge (Béneker, 2018; Maude and Caldis, 2019).

Powerful knowledge was introduced in sociology of education by Young (2009) as a concept stating that all students from all backgrounds should have access to disciplinary, subject-specific knowledge. This knowledge is concrete and real, but it can also be counter-intuitive, theoretical and abstract. It transcends the limits of the students' own experience, so that they learn to think in new and critical ways (Stoltman et al., 2015). As they learn, students increasingly and actively engage with more abstract and complex knowledge, in a process that Winch (2013) calls 'epistemic ascent'. The complexity and level of abstraction lead to a 'potential discursive gap' (Bernstein, 2000: 30), which shows that various solutions are possible and that knowledge can be fallible, and which stimulates creative and critical reasoning. Because of this complexity in knowledge (knowing *that*) and skills (knowing *how*), which are interwoven in teaching practice (Young and Muller, 2016), this knowledge is regarded as knowledge of 'high epistemic quality' (Hudson, 2018).

However, research shows that tasks addressing higher-order thinking – in other words, aiming at powerful knowledge – are limited in geography textbooks and lessons (Jo and Bednarz, 2009; Krause et al., 2017). Furthermore, a recent analysis of tasks in geography textbooks for upper secondary education revealed that tasks in Dutch textbooks focus more on the development of systematic knowledge, whereas in textbooks in North Rhine-Westphalia (NRW), Germany, higher-order thinking tasks are more numerous (Krause et al., 2021a). This raises the question of the recontextualisation of the discipline of geography in both curriculum contexts, as the differences in textbook tasks suggest differences in access to higher-order thinking, and therefore in the nature of the subject. By 'recontextualization', we understand a principle 'which selectively appropriates, relocates, refocuses, and relates other discourses to constitute its own order' (Bernstein, 2000: 33).

In this article, we focus on how a different recontextualisation process and curriculum discourse are shaping the curriculum contexts, which might explain differences between the attention to specific cognitive processes fostered by geography tasks. To do this, we will use the theories of the British sociologist of education Basil Bernstein (1975, 2000), which have been valuable for a better understanding of knowledge itself, as well as of the transformation of knowledge on its way to the classroom (Firth, 2018; Gericke et al., 2018). We will first outline Bernstein's ideas about recontextualisation in education, and – before introducing the research question – we will briefly describe the curriculum contexts of the Netherlands and NRW.

Theoretical framework

According to Bernstein (1975, 2000), learning is a path during which the student is 'initiated' into the knowledge structure of the subject. Progression in learning involves two parallel paths: (1) from concrete knowledge and simple procedures to abstract knowledge and multiple perspectives that are regulated by recognition rules; and (2) from obvious, simple answers to elaborated text structures, controlled by realisation rules. However, the degree to which students have access to knowledge of high epistemic quality varies between countries, and also between different types of schools within a country. Bernstein (2000: 18) asserts that curriculum contexts have, through control mechanisms, an influence on content (declarative knowledge, as well as procedural knowledge) and the expected outcomes.

Bernstein (2000) describes education as a 'pedagogic device' which regulates the communication it makes possible by selectively acting on the meaning potential of that communication: it enhances or restricts the realisation of that communication

(in our specific case, the type of geography task). Within that device, Bernstein (1990) distinguishes three subfields. The primary context is the field of knowledge production, which produces the disciplinary, as well as the educational, discourse. The secondary context consists of schools at various levels, the pedagogical practice, where the reproduction of the discourse takes place. Here, Bernstein (2000: 44–50) distinguishes two pedagogic models: a performance model and a competence model. In the former model, control mechanisms are more explicit and focus on measurable performances, whereas in the latter model rules are more implicit and the cognitive, affective and social development of the individual student is emphasised. Finally, there is the recontextualising field, where discourses from the primary context are transformed into pedagogic discourses and transferred to the secondary context. Recontextualisation is carried out by different agents, such as specialised departments of the state and specialised educational media.

These three subfields of the pedagogic device are controlled by rules. According to Bernstein (2000, 1975), these rules work with two main principles: classification and framing. *Classification* relates to the purpose of the curriculum, and is the result of decisions about the content selection, declarative as well as procedural knowledge, for transmission in education (the 'what'). *Framing* relates to the pedagogy and how the transmission takes place, by sequencing, pacing – the amount of time for what has to be learned – and assessment (the 'how'). It controls the expected outcomes and the way they are communicated. Classification and framing always work together, and they vary between strong and weak, depending on the type of school in a specific curriculum context, and also on curriculum contexts. The main rules regulating the pedagogic device are distributive, recontextualising and evaluative rules (Bernstein, 2000: 28). They link the various levels that are engaged in the production of the pedagogic discourse and that lead to different features of that discourse. Hence, to understand the communication that the device facilitates (in our case, the types of tasks used in NRW and in the Netherlands), the rules of the pedagogic device are key:

- *Distributive rules* regulate the access of social groups to different forms of knowledge and consciousness. This means that not all social groups will be introduced to deep knowledge structures at the same level. The question of social justice resulting from this handling of distributive rules forms the basis for the discussion about epistemic access (Wheelahan, 2010).
- *Recontextualising rules* guide the pedagogic discourse, which is a product of an official recontextualising field dominated by the state (for example, ministries, curriculum agencies and school inspectorate) and a pedagogic recontextualising field (for example, departments of education at universities and textbook publishers). Recontextualising rules construct the thinkable – the official knowledge (Bernstein, 2000).
- *Evaluative rules* constitute any pedagogic practice, as the only purpose is to transmit criteria: 'Evaluation condenses into itself the pedagogic code and its classification and framing procedures, and the relationships of power and control that have produced these procedures' (Bernstein, 2000: 18).

Curriculum contexts of the Netherlands and North Rhine-Westphalia

After primary education to the age of 10 or 12, students in both NRW and the Netherlands are allocated to different types of schools for secondary education according to their prior educational achievements. In the case of NRW, while the 16 German states

(*Länder*) function autonomously, when it comes to education (curriculum documents) the curriculum context of NRW is embedded in the German setting (discourse). The Dutch *bovenbouw vwo* and the *Gymnasiale Oberstufe* in NRW represent the final three years of the highest level of upper secondary education (pre-university education). A diploma entitles graduates to enrol at a university. For upper secondary education, both contexts include what Bernstein (1975) labels a collection-type curriculum: geography is taught separately from subjects such as history or biology. Geography is an elective subject in upper secondary education in both contexts.

After a period of educational reform in the Netherlands in the 1990s, with a strong emphasis on students' self-regulation (Carpay, 2010), there has been an ongoing curriculum debate, the outcomes of which are still unclear for upper secondary education. The current geography curriculum for upper secondary education is based on Van der Vaart (2001) and a curriculum committee of the Royal Dutch Geographical Society (KNAG, 2003) aiming at developing geographical thinking and bringing knowledge back into the curriculum. Within the field of subject-specific pedagogy, this curriculum was welcomed at first because of the expected shift to more challenging tasks with a focus on geographical enquiry and discussion of controversial issues (Donkers, 2003). However, the implemented curriculum has since been criticised due to the absence of higher-order thinking, mainly in the context of the pre-shadowing effect of the high-stakes examinations.

When it comes to support by the (relatively small) pedagogic recontextualising field, the only Dutch handbook for subject didactics in secondary schools (Van den Berg et al., 2009) gives little attention to geographical skills and methods, urging enquiry-based learning and thinking strategies. In the only magazine for geography teachers, tasks have barely played a role, and between 2011 and 2018 exemplary materials were only offered 11 times.

Since the early 2000s, the German educational and subject-specific pedagogical debate has been influenced first by mediocre German results in the PISA and TIMSS studies, and later by publications on effective learning in schools (Reinfried and Haubrich, 2015). This has led to a change from objective-led to competence-based curricula. The German Geographical Society (DGfG, 2007) developed educational standards defining six areas of competence (subject-specific knowledge, spatial orientation, gathering information/methods, communication, evaluation and action), which have been updated regularly (DGfG, 2020) and which form the basis for the curricula in all states (Hoffmann, 2015). This change is seen as a paradigm shift from input to output orientation, which it was hoped would lead to a change in task setting in schools (Colditz et al., 2007). A fairly large proportion of the researchers of subject-specific pedagogy were involved in the development of the educational standards for geography and the further elaboration of competence models (Meyer et al., 2011). Criticism focuses on three main aspects. First, output orientation leads to a focus on only measurable outcomes (Meyer, 2015). Second, tasks at the highest level do not really stimulate higher-order thinking, but rather only call for reproduction of the resources offered (Hieber et al., 2011). Third, teachers face difficulties realising the complex challenge of competence-based education and the attention required for complex tasks and argumentation (Budke et al., 2015; Kanwischer, 2011).

All recently published German books on subject-specific pedagogy focus on competence-based education, the educational standards and the role of complex tasks in respect of analysing, evaluating and problem solving. The two existing teacher magazines publish exemplary materials (lesson series), considering competences, performance levels and tasks for every topic, including 20 special editions between 2007 and 2018.

The similarities in the structure of the school system and the position of geography as a school subject, as well as the differences in classification and framing, not only make the two contexts suitable for comparison (Zemanek and Nerbig, 2012), but also allow us to get more detailed insight into how recontextualisation works with respect to higher-order thinking tasks.

Research question

In our research, Bernstein's ideas serve as an 'explanatory framework' (Maton, 2014: 39) for the description and analysis of the curriculum contexts of NRW and the Netherlands. In order to understand the attention to, and the nature of, higher-order thinking in geography education, we focus on the official recontextualising field, as the analysis of 'the role of departments of the state in the relation and movements within and between the various contexts and their structuring fields' (Bernstein, 1990: 53) is key. As we concentrate on the highest level of upper secondary education in the two states, which in both cases prepare explicitly for university study, distributive rules in the sense of gaining access to a specific type of education have already been applied at an earlier stage, at 10 or 12 years old. Therefore, we focus on the evaluative and recontextualising rules. Our research question is: What types of geography tasks coincide with particular kinds of recontextualisation by the official recontextualising field in two different curriculum contexts?

Methodology

To address the relationship between the rules of the pedagogic device and higher-order thinking tasks in the two curriculum contexts, we concentrate on the following aspects derived from Bernstein's (2000: 12–13) theory: selection of content, sequencing, pacing, assessment, and means of control by the official recontextualising field. We systematically examined the following documents: the official curricula for geography in upper secondary education at the highest level, additional curriculum documents, legal regulations and high-stakes examinations. This can be regarded as a form of content analysis (Krippendorf, 2004).

In accordance with Rosenlund (2019), who studied the discourse of the Swedish history curriculum and emphasised the need for level descriptors, we used the Geography Task Classification Framework (Krause et al., 2021a) to analyse curriculum aims and the high-stakes examinations of 2017 and 2018. This instrument considers recognition as well as realisation rules, and it makes it possible to identify how tasks contribute to the five aspects of powerful knowledge: factual knowledge, conceptual knowledge, systematic knowledge, knowledge and language of societal debates, and knowledge of knowledge (Béneker, 2018). The cognitive processes of the framework (see Table 1) were used as analytical labels (Kuckartz, 2010: 59).

In reference to the curricula and for reasons of comparability, we focused on a single topic, namely 'geographies of agriculture and food'. This topic appears in both curricula: as 'agricultural structures in different climate and vegetation zones' in NRW, and as 'global food issues' in the Netherlands. It makes it possible to combine physical and human geographical knowledge and to study issues of sustainability and inequality. Furthermore, we included relevant parts of the curricula that describe subject-specific skills. It is important to emphasise that the analysed documents should be regarded as parts of the intended curriculum or implemented curriculum (in the case of the high-stakes examinations), but not as the attained curriculum by students (Van den Akker, 2004: 3).

Table 1: Geography Task Classification Framework (Adapted from Krause et al., 2021a)

Level of thinking	Cognitive process
Lower-order thinking	Recognising (learned knowledge) Reproducing (learned knowledge) Performing (simple procedures)
Use of thinking strategies	Transforming (e.g. verbal into non-verbal), extracting or completing information (in schemes) Exemplifying Comparing or classifying Giving the main points or summarising Finding, naming or explaining patterns and correlations Constructing hypotheses or formulating enquiry questions
Parts of higher-order thinking	Discrimination of relevant or irrelevant information in larger contexts Generating a complex, coherent, relational structure Identifying intentions, values and biases in information Checking correctness and consistency of information Naming possible solutions to a problem based on criteria
Higher-order thinking	Analyse: breaking complex materials into their constituent parts, identifying intentions and biases, generating a logical structure to present the result in (for example, an essay) Evaluate: judging a phenomenon after analysis based on criteria presented in, say, an essay or by using a complete argumentation Create: developing a solution to a problem in a structured manner after analysis by using criteria, and presenting it in (for example, a poster, map or essay)
Metacognition	Reflecting on the content, the process or oneself
–	Presenting results

The first author and an additional expert on subject didactics categorised 42 aims for the NRW curriculum, and 35 aims for the Dutch curriculum. As 15 of these actually consisted of 2 or 3 aims, a total of 95 curriculum aims were classified. Furthermore, a total of 68 questions from the high-stakes examinations of 2017 and 2018 were categorised. In a second step, 13 curriculum aims and 8 examination questions were examined in detail, in order to establish sufficient interrater agreement (see Kuckartz, 2010: 61). Additional curriculum documents and legal regulations were examined using tasks, levels of thinking, selection of content (classification), sequencing, pacing and assessment (framing) as analytical labels.

Results

Table 2 first gives an overview of the results, and we then elucidate the results for each category.

Selection of content

The Dutch geography curriculum for upper secondary education consists of one general domain focusing on skills and four (two nomothetic and two regional) domains

Table 2: Aspects of control and support with regard to higher-order thinking tasks in the Netherlands and NRW (Source: Authors, 2021)

Aspect of control or support	The Netherlands	NRW
Selection of content	Detailed curriculum (537 substantive concepts, 161 generalisations and 110 operation methods) with a focus on knowledge and use of thinking strategies	Competence-based curriculum (128 curriculum aims) giving leeway to teacher with consideration for a knowledge base, use of thinking strategies and a clear focus on higher-order thinking
Sequencing	Distinction in curriculum aims for high-stakes and school examinations Leeway	No distinction in curriculum aims for high-stakes and school examinations Leeway, but explicit role for the subject departments
Pacing	Leeway, but pressure is experienced by teachers because of the detailed specification of the curriculum	Leeway, but explicit role for the subject departments
Assessment	Generally written marks Detailed high-stakes examination (31–34 questions) – design not public – focus on use of thinking strategies	Written and oral marks, quality of argumentation and language Strong regulation for examinations: form, frequency, categorisation of action verbs (such as discuss or explain) – design is public – focus on higher-order thinking in high-stakes examinations
Means of control by the official recontextualising field	One enquiry requested (own region) Average gap between school and high-stakes examination > 0.5 (scale 1–10) school inspection, quality control	Student entitled to written feedback Individual gap between school and high-stakes examination > 4 (scale 1–15) individual student resit

in respect of geographical knowledge. In the curriculum documents, the Board of Tests and Examinations (CvTE) and the Institute for Curriculum Development (SLO) specify 537 substantive concepts, 161 generalisations and 110 procedures and skills. There is a distinction in the Dutch curriculum between the curriculum aims for high-stakes examinations and the school examination. The first covers 60 per cent of the content (SLO, 2015), and the second comprises components that are not assessed in the high-stakes examination, but which might include topics of the high-stakes examination. Whereas specification for the high-stakes examination is compulsory, it is only recommended for the school examination.

The geography curriculum of NRW (MfSuW NRW, 2014) is organised by a nomothetic approach, with seven topics comprising four competence fields (content knowledge, methods, judgement, and an associated spatially oriented competence that can be applied (*raumbezogene Handlungskompetenz*)). In respect of topics, the competences to be achieved (outcomes) are specified with regard to subject-specific knowledge and evaluation. A total of 128 curriculum aims are formulated for the three

Table 3: Categorisation of curriculum aims

Cognitive process	The Netherlands		NRW	
	n	%	n	%
Reproducing (learned knowledge)	5	10.87	8	16.33
Performing (simple procedures)	3	6.52	1	2.04
LOWER-ORDER THINKING	8	17.39	9	18.37
Transforming (e.g. verbal into non-verbal), extracting or completing information (in schemes)	3	6.52	2	4.08
Comparing or classifying	8	17.39	2	4.08
Finding, naming or explaining patterns and correlations	10	21.74	1	2.04
Constructing hypotheses or formulating enquiry questions	5	10.87	1	2.04
USE OF THINKING STRATEGIES	26	56.52	6	12.24
Discrimination of relevant/irrelevant information in larger contexts	2	4.35	2	4.08
Generating a complex, coherent, relational structure	0	0	1	2.04
Identifying intentions, values and biases in information	0	0	3	6.12
Checking correctness and consistency of information	0	0	2	4.08
PARTS OF HIGHER-ORDER THINKING	2	4.35	8	16.33
Analyse	4	8.70	6	12.24
Evaluate	3	6.52	5	10.20
Create	0	0	2	4.08
HIGHER-ORDER THINKING	7	15.22	13	26.53
Reflecting on the content, the process or oneself	2	4.35	4	8.16
Presenting results	1	2.17	7	14.29

Note: Categorisation of 46 Dutch curriculum aims (SLO, 2015) and 49 NRW curriculum aims (MfSuW NRW, 2014) in respect of cognitive processes by means of the Geography Task Classification Framework (Krause et al., 2021a).

years of upper secondary education. There is no distinction in respect of curriculum aims between school and high-stakes examinations as there is in the Netherlands. The analysis of the curriculum aims led to the results shown in Table 3.

In both curriculum contexts, a substantial part of the curriculum aims to focus on reproduction, so that students acquire a vocabulary of the subject (Lambert, 2011). Whereas the Dutch curriculum emphasises the use of thinking skills, that is, the acquisition of systematic knowledge, in the NRW curriculum nearly half of the goals refer to (parts of) higher-order thinking. Here, more emphasis is given to knowledge and language to participate in societal debates, and to the origins and limitations of knowledge, which are both important aspects of powerful knowledge (Krause et al., 2021a).

Sequencing and pacing

Teachers in the Netherlands are free to sequence and pace the school curriculum, for they are given leeway in the development of skills that are not assessed in the high-stakes examination, such as research skills. However, teachers experience time

pressure due to the specification of the programme because of curriculum documents and textbooks (SLO, 2014). Teachers in NRW also have leeway when it comes to sequencing and pacing, but here decisions are made by the geography departments in schools, whose role is described by legislation, unlike in the Netherlands (SchulG, 2020).

Assessment

The NRW curriculum emphasises the self-regulation of students, explicitly stressing the complexity of resources to be operated, and links the competences to be developed through tasks and assessment. Instructions for the construction of written tests are delivered by the Ministry of Education, and these focus on the autonomous and adequate evaluation of resources, stringent argumentation, a professional written presentation and accomplishment within a given time, consisting of a theme, connected subtasks and a package of resources (APO-GOST, 2018; MfSuW NRW, 2014: 46–7). To guarantee the acquisition of various competence levels, three performance levels (reproduction, reorganisation and transfer, and reflection and problem solving) have been identified, and action verbs (*Operatoren*) have been officially defined and ascribed to these performance levels (MfSuW NRW, 2015). A student is entitled to detailed feedback on his or her competence development, achieved through transparent corrections and responses by the teacher with regard to strengths, weaknesses and possibilities for improvement (MfSuW NRW, 2014: 45).

In NRW, students' marks for the school examination consist of written assessments and 'other participation', such as oral contributions to lessons, presentations, note-taking and paper writing. Both argumentation and language are marked, and incorrect use of language can lead to a lower mark according to legal regulations (MfSuW NRW, 2014: 46). The central, high-stakes examination for NRW consists of two or three tasks and considers at least the highest two performance levels (see Table 4), as prescribed for the written tests during the school examination. All topics from the past two years may be covered, but students can choose from three topics offered. Students' performance is judged by two assessors. If they disagree by more than 3 points (out of 15), a third assessor is involved (APO-GOST, 2018).

The Dutch curriculum also emphasises the self-regulation of students (SLO, 2015), and it underlines the importance of tasks which cover all categories of Bloom's revised taxonomy (SLO, 2015: 107–8). However, unlike the NRW curriculum, it does not provide detailed instructions on tasks for assessment. The only prescription for the school examination refers to empirical research, which students have to carry out (SLO, 2015: 108–10). Therefore, teachers have more leeway in the construction of their written tests.

Furthermore, in the Dutch context, oral contributions only factor in the school examination in the form of a presentation of an enquiry. Otherwise, all marks derive from written evidence. In contrast to NRW, the matrix used for the construction of the Dutch examinations is not accessible to the public. The case study intended by the Van der Vaart commission (KNAG, 2003) has not been introduced into the central examination. In line with the detailed specification of the curriculum aims, the high-stakes examination consists of eight tasks related to four curriculum domains. Each task consists of several questions on a topic, which results in between 31 and 34 questions per examination. The marking of the high-stakes examination by the teacher is checked by a teacher from another school (Eindexamenbesluit VO, 2019). The detailed instructions for marking give leeway to interpret students' answers and

Table 4: Cognitive processes fostered by tasks in high-stakes examinations in the Netherlands and NRW in 2017 and 2018

Year	The Netherlands				NRW			
	2017		2018		2017		2018	
Cognitive process	n	%	n	%	n	%	n	%
Reproducing (learned knowledge)	1	3.03	0	0	0	0	0	0
Performing (simple procedures)	2	6.06	4	12.90	0	0	0	0
LOWER-ORDER THINKING	3	9.09	4	12.90	0	0	0	0
Transforming (e.g. verbal into non-verbal), extracting or completing information (in schemes)	7	21.21	5	16.12	1	33.33	1	33.33
Comparing or classifying	3	9.09	2	6.45	0	0	0	0
Finding, naming or explaining patterns and correlations	17	51.52	16	51.61	0	0	0	0
Constructing hypotheses or formulating enquiry questions	2	6.06	4	12.90	0	0	0	0
USE OF THINKING STRATEGIES	29	87.88	27	87.12	1	33.33	1	33.33
Identifying intentions, values and biases in information	1	3.03	0	0	0	0	0	0
PARTS OF HIGHER-ORDER THINKING	1	3.03	0	0	0	0	0	0
Analyse	0	0	0	0	1	33.33	1	33.33
Evaluate	0	0	0	0	1	33.33	1	33.33
HIGHER-ORDER THINKING	0	0	0	0	2	66.66	2	66.66

Note: Dutch tasks are from College voor Toetsen en Examens (2017, 2018); NRW tasks derive from Koch and Böker (2018). The categorisation is based on the answer models by using the Geography Task Classification Framework (Krause et al., 2021a).

approve them based on reasonable argumentation. However, because there is a focus on concise answers and succinct formulation, only the first answers are taken into account, or students have to communicate their answers in specific ways, such as naming a cause–effect relationship. Based on the first results, the marks are scaled, which means that marks can be 1.0 point lower or higher than the original intended scale (on a scale of 1.0 to 10.0). This is done in order to monitor the difficulty of the high-stakes examinations over time. The categorisation of the 2017 and 2018 high-stakes examinations is shown in Table 4.

Questions in the Dutch high-stakes examination focus on the use of thinking strategies, and on two categories in particular, whereas the NRW examination asks for engagement with the resources offered, breaking them down and then restructuring the information and evaluating a situation/development/measurement using criteria.

Means of control by the official recontextualising field

In addition to the regulations in respect of assessment, as described above, both curriculum contexts have additional means of control. In the Netherlands, the school inspectorate monitors whether the average results for the high-stakes examination

are consistent with or higher than the national average, and whether the difference between the average school examinations and high-stakes examinations is less than 0.5 points (Inspectie van het Onderwijs, 2011). If this difference occurs for more than three years in a row, the school inspectorate will take quality control measures, such as strict supervision and performance agreements, to guarantee the value of the diploma (Inspectie van het Onderwijs, 2018, 2020). In NRW, the student has to pass another oral examination if the result differs from the entry mark of the school examination by more than four points (APO-GOSt, 2018).

Conclusion

In NRW, recontextualisation by the official recontextualising field is characterised by a strong classification. Via curriculum aims and assessment, recognition and realisation rules focus on the achievement of higher-order thinking and the production of legitimate texts in propaedeutic terms, which is an important aspect of powerful knowledge. The framing is strong when it comes to support and guaranteeing the quality of the individual expected learning outcomes. This is done through regulations concerning the role of language used by students, and the form in which written and oral results are presented, the definition of action verbs in relation of tasks, the definition of performance levels, the entitlement to feedback from the teacher and the form this takes. Evaluative rules are in line with the curriculum aims: assessment by high-stakes examinations and school examinations focuses on higher-order thinking tasks, and is predictable for both teachers and students, as the legitimate texts have to be produced from a given set of resources in the same way. Parallel to Bernstein's (2000) knowledge structure, Maton (2014) distinguishes a knower structure, which is also regulated by the principles of classification and framing. In the case of NRW, we see that classification is strong for both teachers and students, but framing is stronger for students: principles of control focus on the student, who has to prove that he or she meets the required standards, as becomes clear in the regulations for an extra oral examination for a student if the gap between school and high-stakes examinations is too large. Teachers still enjoy what Young (2014) refers to as 'public trust' to guarantee standards and quality. This is also seen in the fact that teachers are free in relation to the content of the prescribed topics, which are not specified in detail, giving the teachers leeway. Furthermore, the emphasis on (parts of) higher-order thinking in the curriculum aims and in high-stakes examinations is reflected in the textbooks, which are important actors in the pedagogic recontextualising field. Textbook tasks focus mainly on extraction of information from resources, analysis and evaluation (Krause et al., 2021a). Likewise, the intended curriculum aims of competence-based learning are supported within the pedagogic recontextualisation context (handbooks for subject didactics, teacher magazines with exemplary materials). The curriculum context in NRW puts a greater emphasis on development and what is achieved during the learning process, which would be more characteristic for a competence model. However, contrary to a competence model, the realisation and recognition rules are explicit. The focus of the evaluation lies more on the content of the product, and Bernstein (2000: 48) suggests that teachers rely less on textbooks and more on their own materials, and are 'less susceptible to public scrutiny and accountability as products are more difficult to evaluate objectively'. Previous research confirms Bernstein's (2000) assumption and shows that, on average, German teachers rely less on textbooks than Dutch teachers (Krause et al., 2017).

In the Netherlands, recontextualisation by the official recontextualising field is characterised by a weaker classification. The emphasis is on recognition rules, and in particular that students can handle the vocabulary and grammar of the subject in order to develop systematic knowledge. The explication of the curriculum aims in terms of concepts and rules guarantees that students can 'solve carefully formulated puzzles', as referred to by Janssen (2017: 3). There is less attention to realisation rules necessary in respect of higher-order thinking and the production of legitimate texts in propaedeutic terms. Realisation rules focus on the first answer being correct, or specific formulations, such as cause-and-effect relationships. The framing is strong when it comes to guaranteeing the average expected learning output, at both the school and nationwide level. In terms of knower structure (Maton, 2014), the framing is strong for teachers, with knowledge described and prescribed in detail. Teachers are held accountable for the quality of the average output, and face sanctions if the required output is not achieved. Conversely, the framing is weaker in terms of sequencing and pacing. The focus of the curriculum aims, gaining systematic knowledge, is reflected in evaluative rules: high-stakes examinations and textbook tasks focus on the use of thinking strategies, in particular correlations (Krause et al., 2021a). However, there is friction between the intended curriculum and the evaluative rules. Although not so much as in NRW, the curriculum refers to higher-order thinking, especially when it comes to the execution of enquiries. Yet this is not supported by the high-stakes examinations, although initially more emphasis on higher-order thinking was expected in the school examinations (Commissie Kwaliteit Schoolexamens, 2018). Here, the tension between the official recontextualising field and pedagogic recontextualising field becomes clear. Despite initial support, there is increasing criticism in the field of subject didactics, which relates especially to how the high-stakes examination is assessed, and its pre-shadowing effects (Van der Schee, 2018). So, whereas in NRW the cohesion between the ideal, the formal written and the implemented curriculum (Van den Akker, 2004) is strong, in the Dutch case the formal written and the operational curriculum put less emphasis on enquiry skills than the ideal curriculum. Moreover, contrary to NRW, the evaluative rules lead to a certain unpredictability for both teachers and students, due to the unpublished design of the high-stakes examination, and the detailed questioning and marking procedures, including possible repercussions. In this sense, the Dutch curriculum context is more in line with a performance model (Bernstein, 2000: 44–50), which focuses on the specific output of the acquirer and the absence of knowledge (what has not been achieved). Marking of performance is then regarded as objective; it guarantees permanent accountability, and the way in which marking procedures are handled defines a teacher's professionalism. There is strong framing, but the teacher has leeway within the limits of the expected outcomes.

Thus, in answer to the research question, the results demonstrate that higher-order thinking is fostered successfully when the intended curriculum is in line with evaluative rules, and that it is fostered by both the discipline of subject-specific pedagogy and the pedagogic recontextualising field. This is an important outcome for all curriculum initiatives aiming at powerful knowledge.

Discussion

Our research question was to examine how particular ways of recontextualisation by the official recontextualising field coincide with certain types of geography tasks. In the NRW context, the focus is on higher-order thinking, and how this must become visible in students' work. Meanwhile, the Dutch context accentuates that students can handle

a specified body of knowledge in defined settings, which Winch (2013) refers to as inferential ability, and which should then ultimately also lead to higher-order thinking.

The difference in attention to higher-order thinking tasks between the two curriculum contexts is an important topic for discussion. First, because it shows how the discipline of geography is recontextualised as a school subject through tasks, which make students engage with the nature of the subject. Besides tasks aiming at systematic knowledge, higher-order thinking tasks are key because they introduce students to discussions within the discipline and lead to powerful knowledge. Second, through higher-order thinking tasks, students learn to use complex ideas on their own, to relate them to exemplary materials, to structure their ideas, to build up their argumentation and, by doing so, to produce legitimate texts. This competence is required within their educational context (Bernstein, 2000: 31) – enrolling in a programme of study at university later on. Both examined contexts prepare students for such a career. We would like to address three questions here.

First, with respect to powerful knowledge, we see that the Dutch discourse focuses more on the building of systematic knowledge. This is an important part of powerful knowledge, because when conceptual knowledge is applied to concrete geographical knowledge, the concepts unfold their explanatory power (Béneker and Van der Vaart, 2020). The NRW discourse not only focuses on knowledge and language of societal debates, but it also considers knowledge of knowledge. This means that it covers two further important aspects of powerful knowledge. An important question is how all aspects of powerful knowledge can be addressed by the official recontextualising field so that it occurs in, for example, textbook tasks and high-stakes examinations, and therefore in lessons.

Second, we see the importance of evaluative rules in both contexts, which confirms Bernstein's (2000: 36) argument that these rules are the key to pedagogic practice (Firth, 2018). In the case of NRW, they foster the development of higher-order thinking and powerful knowledge, whereas in the case of the Netherlands the focus is on systematic knowledge. The school examination should intentionally focus more on higher-order thinking, but specific rules to monitor average output put a greater importance on high-stakes examinations and the way they are constructed. The school examination therefore becomes more like the central examination (Commissie Kwaliteit Schoolexamen, 2018), which is, for instance, supported by pre-prepared tasks for the school examination. Bijsterbosch (2018) shows the pre-shadowing effect of high-stakes examinations on formative assessments, and presumably on teaching, in Dutch geography lessons for pre-vocational education. The question here is to what extent teachers are able to realise higher-order thinking in their geography lessons and to contribute to powerful knowledge, if this is not supported, or required, by the evaluative rules.

Third, although the transition from upper secondary education to university is not a one-way relationship – it is not only the task of secondary education to prepare for university; universities also have to be aware of where students are coming from, and what their needs are (Tate and Hopkins, 2019) – research shows that first-year students (in the United Kingdom) experience more of a lack of subject-specific and generic study skills than of subject-specific knowledge and express the need to be prepared for this at school (Tate and Hopkins, 2019). However, if we understand acquisition of realisation rules in upper secondary education as the attainment of an elaborated code in order to be able to produce legitimate texts as required in higher education, the question is how students from less-privileged backgrounds can prepare for it. Bernstein (2000: xx) frequently reiterates that the 'distribution of different knowledges and their

possibilities is not based on neutral differences in knowledge but on a distribution of knowledge which carries unequal value, power and potential'. This makes the question of epistemic access, even at the late stage of upper secondary education, a political question.

When it comes to the quality of education, the importance of the influence of curriculum contexts on a teacher's repertoire is often underestimated. Bernstein's (2000) concepts help to uncover the influence of these contexts on higher-order thinking (and higher-order thinking tasks) in upper secondary geography education, and thus the potential for powerful knowledge. A limitation of this study is that we focused on two curriculum contexts in which the school system is structured in a similar way. We have not investigated whether different curriculum contexts, such as those in England or France, would produce the same results.

Furthermore, we see that reflection on construction and the use of tasks in one's own curriculum context is of great importance. International comparisons can help in this process. However, we still do not know enough in respect of the operational curriculum, the curriculum in action (Van den Akker, 2004), that is, what types of tasks teachers really use. In particular, we need to learn more about the extent to which the rules of the pedagogic device, that is, the curriculum contexts, influence the considerations of teachers in respect of the tasks they use.

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Declarations and conflict of interests

The authors declare no conflicts of interest with this work.

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