



## Differentiation in education: a configurative review

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### ABSTRACT

Differentiation in education can be seen as a means of responding to student diversity in order to meet the vision of *a school for all*. Differentiation has been widely addressed within a western context, and it appears to be a versatile phenomenon as it occurs under various guises and with a variety of terms and modes of operationalizations. The aim of this configurative review is to investigate how differentiation appears in the international context and to contribute to a much-needed overview of the concept. Analysis of 28 scientific papers representing a broad range of national affiliations resulted in two main findings. First, differentiation is a complex idea that appears to be presented either as differentiating students or differentiating teaching. Four perspectives for approaching differentiation further illustrate the complexity of the phenomenon: *differentiation as individualization*, *differentiation as adaptation to specific groups*, *differentiation as adaptations within diverse classrooms*, and *differentiation in a system perspective*. Second, the analysis revealed that there are almost no studies transcending the focus on teachers and the classroom by addressing the organizational or system/policy level. This review argues for the benefits that a more system-oriented perspective of differentiation would provide.

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## Introduction

Differentiation in education is a widely addressed concept that has been particularly relevant in the wake of the global visions of *Education For All* (EFA; UNESCO, 1990) and *Inclusive Education* (IE; UNESCO, 1994). These visions have been reaffirmed several times, including at the World Education Forum in Dakar (UNESCO, 2000), at the 48<sup>th</sup> session of the UNESCO International Conference on Education in Geneva (UNESCO, 2008), and finally by the Incheon Declaration that was signed at the World Forum on Education (UNESCO, 2015). The Education 2030 Incheon Declaration and Framework for Action not only reaffirms the visions of EFA and IE, but is also a commitment to an education agenda captured by UN Sustainable Development Goal (SDG) 4: 'Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' (UNESCO, 2015, p. 7). Both EFA and IE emphasize that all students should learn together – which entails a greater diversity in classrooms and schools – and that all students should benefit from the provided education – which should lead teachers and schools to engage in creating a good learning environment for all students. Access to regular schools for all children and youth is essential to EFA because 'regular schools with this inclusive orientation are the most effective means of combating

discriminatory attitudes, creating welcoming communities, building inclusive society and achieving education for all' (UNESCO, 1994 p. ix). With that being said, there is neither a universal understanding of what inclusive education is nor a common consensus on 'how to do it' (Ainscow & Miles, 2008; Allan, 2008; Opertti et al., 2013). Thus, it is of great importance to explore concepts and pedagogical practices that can contribute to a pedagogical approach aligned with the educational policy advocated for in EFA and IE. One such concept is differentiation. Differentiation can be seen as a means of responding to student diversity because differentiation in education seeks to take into account the characteristics and needs of all students. However, despite differentiation being a well-known and extensively addressed concept in the pedagogical literature at all levels, there seems to be a weak consensus regarding the definition of the concept. The diversity of its terminology, forms, rationales, and origins contributes to a complex and wide-ranging research field.

### The concept of differentiation

Differentiation in education is a broad term that is both versatile and difficult to constrain. This is partly because it is applied within many disciplines and thus often carries different meanings. Differentiation also occurs under various guises and employs a variety of

terms and modes of operationalization. Other concepts – such as inclusion, universal design for learning, and personalized learning – exhibit some degree of overlap with differentiation. It is not possible to make a full mapping of such a versatile research field within the limits of this introduction, and thus we chose the Scandinavian use of the concept as our starting point and then extended the picture by discussing this in light of other well-known studies and scholars outside the Scandinavian perspective.

In Scandinavia, differentiation evolved as a subject of general debate during the latter part of the last century. This debate was fuelled by a gradual change from a tiered school system to the concept of a ‘school for all’ (Blossing et al., 2014). The tiered system made use of *organizational differentiation* in the sense of ‘dividing students into groups or classes based on their assessed abilities and aptitudes for making use of the teaching’ (Persson, 2010, p. 116, our translation). The term is used largely in Norwegian and Swedish education and corresponds to what is called *student differentiation* in Denmark (The Danish Evaluation Institute, 2004, 2011). Organizational differentiation rests upon the assumption that students should be taught in groups according to their similarities. Grouping students by similarities – such as abilities, aptitudes, particular characteristics, or limitations – is assumed to increase the teacher’s opportunities to adapt the teaching to the students’ readiness for learning (Bachmann & Haug, 2006; Dale, 2008; Persson, 2010; Persson & Persson, 2012; Skaalvik & Fossen, 1995; The Swedish National Agency for Education, 2009). Organizational differentiation in a Scandinavian perspective has a wide range of practices, from tracked or tiered educational systems to in-class ability grouping. Outside Scandinavia ability grouping, tracking, streaming, and setting are not necessarily seen as forms of differentiation. A recent study points out that the research field on differentiation suffers from inconsistent theoretical framing and definitions (Bondi et al., 2019, p. 356). Graham et al. (2020) problematize the consequences of this: ‘Given the looseness of terminology and the appropriation of the word “differentiation” to describe incompatible practices, such as ability streaming and segregation, it is difficult to know what is being implemented in the name of differentiation’ (Graham et al., 2020, p. 162). Nevertheless, the Scandinavian term ‘organizational differentiation’ is clearly related to terms such as *ability grouping*, *tracking*, *streaming*, and *setting*. As for organizational differentiation, the overall idea is to group students together in classes according to their ability (Wallace, 2015a, 2015b). The different terms mirror how pervasive the ability grouping is, and tracking and streaming may be the most radical forms of ability grouping when referring to long-

lasting educational pathways (Hanushek & Wössmann, 2006; Oakes, 2005; Wallace, 2015c). Streaming means allocating students to classes according to their ability rather than to mixed-ability classes. Setting may be the least radical form, implying the establishment of ability groups for a shorter time or for particular subjects (Wallace, 2015b). A wide-ranging critique has been carried out on the more comprehensive forms of ability grouping. In particular, Jeannie Oakes (2005) and Robert Slavin (1987, 1990) raised issues about equity and equality within the tracked American education system during the 1980s. In the UK, Susan Hart, among others, has raised critical questions about the use of grouping based on determinist beliefs about ability (Hart, 2004).

While creating a ‘school for all’ in Scandinavia, organizational differentiation was no longer seen as an appropriate or adequate approach, and the focus shifted gradually towards *pedagogical differentiation* (Blossing et al., 2014). Pedagogical differentiation is a commonly adopted term in Norway and Sweden, and the corresponding term in Denmark is *teaching differentiation* (Dale, 2008; Egelund, 2010; Persson, 2010; Persson & Persson, 2012; Skaalvik & Fossen, 1995; The Danish Evaluation Institute, 2004, 2011). The key to pedagogical differentiation is its adoption of diversity in the approach to teaching and learning within a heterogeneous classroom, and it addresses everything that teachers do to offer variation to different students in terms of instruction, content, workload, tempo, tasks, and assessments (Persson, 2010; Skaalvik & Fossen, 1995). Pedagogical differentiation is the Scandinavian term for differentiated instruction and is traditionally regarded as an educational tool ‘that seeks to maximise each student’s growth by recognizing that students have different ways of learning, different interests, and different ways of responding to instruction’ (Ravitch, 2007, p. 75). Carol Ann Tomlinson, a central contributor in the field, summarizes differentiated instruction as engaging students in teaching through ‘different approaches to learning, by appealing to a range of interests, and by using varied rates of instruction along with varied degrees of complexity and differing support systems’ (Tomlinson, 2014, pp. 3–4). According to Tomlinson, differentiated instruction is a proactive and student-centred approach that provides different ways of acquiring content, processing ideas, and developing products (Tomlinson, 2017, p. 1). The rationale behind differentiated instruction is that student diversity in heterogeneous classrooms requires a flexible approach to teaching that offers challenges and support to all students regardless of differences in interests, readiness, or learning profile (Tomlinson, 2014). Tomlinson also emphasizes that differentiation is not *individualized* instruction, but

rather is about creating multiple options for learning activities within the blended classroom (Tomlinson, 2017). Vickerman (1997, 2009, 2012), on the other hand, seems to take a more individual-centred approach to differentiation. He emphasizes that differentiation is about adapting teaching, learning, and assessment as a means of offering opportunities that are appropriate and relevant to the individual needs of all students, including those with special educational needs. Differentiation is also employed in the field of special education and inclusive education (Florian, 2019) as a strategy for ‘reasonable adjustments for disabled children and young people and provision for pupils with [special education needs]’ (Department for Children Schools and Families, 2008, p. 9).

The Scandinavian distinction between organizational and pedagogical differentiation is influenced by the German didactic Wolfgang Klafki (Barow, 2013). Klafki (2011) distinguishes between a) *external differentiation* separating students into groups based on various selection and classification criteria, and b) *internal differentiation* involving all forms of differentiation conducted within a class or group. Outside Scandinavia, the discussion of ability grouping has its own extensive literature and history (see, e.g. Oakes, 2005; Slavin, 1987, 1990) and it is not necessarily comprehended as a form of differentiation. Graham et al. (2020) claim that when research on ability grouping intersects with research on differentiation this contributes to an inconsistent use of the term differentiation. From a Scandinavian point of view, this is not a challenge to the concept of differentiation because ability grouping is comprehended as a form of external/organizational differentiation. Thus, in our review we have chosen to include both organizational (external) and pedagogical (internal) differentiation as presented in this introduction.

In the early 2000s, new perspectives about differentiation were raised by the Norwegian scholars Dale and Wærness (2003). At the end of a large school development research project on differentiation, they concluded that differentiation seemed to be mostly perceived as an individualizing concept. Based in this finding, Dale and Wærness argued for a shift in perspective from the individual student to the educational system and its institutions. The focus here was directed towards ‘*educational conditions and the ability of the educational institution to create differences [...] irrespective of the level of student diversity*’ (Dale & Wærness, 2003, p. 47, our translation). The discussion regarding this project is interesting, not only in terms of exploring how differentiation is perceived, operationalized, and put into practice, but also in terms of the extent to which the educational context is part of the concept. This study was conducted in the wake of UNESCO introducing the

concepts of EFA and IE, and one may ask if these worldwide educational principals have influenced the debate raised by Dale and Wærness. Pointing towards educational conditions and the ability of the educational institution to facilitate learning for all as a new way of approaching the concept of differentiation addresses the core of EFA and IE.

Differentiation is clearly a somewhat changeable and versatile concept, but at the same time it holds some possibilities for creating conditions for a more inclusive education. Hence, the purpose of this configurative review is to contribute to a much-needed overview of the concept by investigating how the concept of differentiation appears in international research and to what extent it takes a wider educational or policy context into account. Two research questions have guided the review process:

- (1) *How is differentiation conceptualized in recent empirical research or literature reviews?*
- (2) *Which levels (the individual to system level) are addressed in studies concerning differentiation?*

## Materials and methods

To answer the research questions, a configurative review (Gough et al., 2017) framed within a systematic approach was conducted into differentiation as a pedagogical concept in the international research literature published from 2000 to 2017. A configurative review organizes data across the included studies and aims to generate new knowledge that is more than the sum of its parts (Thomas et al., 2017). Configurative reviews can take form as an interpretive conceptual analysis where concepts are the data for the analysis (Gough & Thomas, 2017), which is the case in this review. More specifically, a thematic synthesis approach (Thomas et al., 2017) guided the process of analysing the data.

### *Searches, selection criteria, and the final selection*

Literature searches were conducted using fixed search strings, and all literature remaining after the application of the exclusion and inclusion criteria constituted the final selection. In order to undertake a configurative review in such a versatile research field, it is important to establish appropriate constraints on the search methodology. Much of the literature on differentiation is not necessarily scientific in nature. Examples include educational books, instructional material, policy documents, and so on, some of which are both normative and ideological. For this reason, we chose to limit our study to peer-reviewed empirical studies and literature reviews on the assumption that empirical studies and reviews include some form of operationalization of differentiation in general as well as illustrate the actual

application of the concept. Three segments were used to establish the search strings, namely theme, field, and research method, and two different search strings were designed:

- (Differentiation OR Differentiated) AND (education OR school OR learning OR teaching) AND (empirical study OR empirical research).
- (Differentiation OR Differentiated) AND (primary school OR primary education OR secondary education OR secondary schools) AND (review of literature OR literature review OR meta-analysis OR systematic review).

The searches were further limited to:

- (1) Time span: published in the period 2000–2017
- (2) Abstract and key words: the term ‘differentia\*’ had to be present in the abstract or among the key words
- (3) Language: full text written in English, Norwegian, Danish, or Swedish

Three relevant databases were selected, namely *ERIC*, *Academic Search Premier*, and *Web of Science*. Because the concept of differentiation is discussed in terms of both general and special education, our aim in choosing large and comprehensive databases was to capture scientific articles from a broad educational context. In order to ensure that Scandinavian studies were also included, the search incorporated three Scandinavian periodicals: *Norsk pedagogisk tidskrift*, *Nordic Studies in Education*, and the *Scandinavian Journal of Educational Research*. This search made use of both English and Scandinavian terms.<sup>1</sup>

The searches were carried out in three steps. First, a search based on ‘differentiation’ as a single term in the first segment in the search strings was conducted in March 2017. Second, in order to extend the selection of papers and make the study more substantial, the searches were repeated in September 2018 with ‘differentiation OR differentiated’ as the first segment in the search strings. Third, we supplemented the final selection of papers with articles derived from references in the already selected papers from both searches (step one in 2017 and step two in 2018). All references that were cited in more than one selected paper were assessed according to the existing inclusion and exclusion criteria. This qualitative selection strategy was chosen to ensure that frequently cited papers were incorporated in the final selection of papers for this study.

Our searches resulted in a total of 807 papers, all of which were assessed according to the following six exclusion/inclusion criteria:

- (Exclusion 1) The study was conducted within a field other than pedagogy or education
- (Exclusion 2) The term ‘differentiation’ was used as a general linguistic expression or as a technical term within another context

- (Exclusion 3) Differentiation in education was mentioned but was not the focus of the study
- (Exclusion 4) The full text of the paper was written in a language other than English, Norwegian, Danish, or Swedish
- (Inclusion 1) The paper was either an empirical study or a literature review of differentiation as a practice or discourse
- (Inclusion 2) The paper was peer-reviewed<sup>2</sup>

Table 1 presents the results of the selection process.

By far the majority of papers were excluded on the basis of exclusion criteria 1 and 2. Exclusion criterion 3 generated the most challenging assessments in that while some papers focused on a topic other than the main theme, such as personalized learning, differentiation was seen as one of the key elements within the paper’s core area of focus. By the end of the selection process 28 studies remained and were included in the configurative review.

### Analytical strategies, categories, and themes

The analysis was performed in three phases according to the thematic synthesis approach (Thomas et al., 2017).

The first phase involved a thorough reading of the 28 selected papers in order to obtain an overview of their focus, themes, and terminology. A written summary was prepared for each paper. Based on the research questions, we chose three overall descriptive themes reflecting similarities and differences, namely *context*, *use of terms*, and *focus*.

The second phase involved establishing eleven descriptive categories based on the three main themes from phase one. These categories were developed to make it possible to relate the selected studies to each other. ‘Context’ was operationalized in three categories in order to obtain an overview of key background information relevant to meeting the requirements of the research questions: *authors/year*, *context*, and *type of study*. Further, ‘use of terms’ was operationalized into three mutually exclusive categories – *differentiating students*, *differentiating content*, and *differentiating teaching* – based on an inductive analysis of the key terms used in the

Table 1. Selection process.

	No. of papers identified	Duplicates	Removed according to exclusion criteria	Removed according to inclusion criteria	No. of papers selected
Step 1	557		–537	–7	13
Step 2	794	–557	–225	–4	8
Step 3	13			–6	7
Total	807*				28

\*this number is corrected for duplicates.



selected articles. Finally, we derived five categories from the theme ‘focus’ that reflected different levels in education: *individuals*, *groups*, *classes*, *schools*, and (educational) *systems*. Both authors coded all papers to the eleven categories using the analytical tool QSR Nvivo 11 Pro. In this case, coding is the process of identifying, indexing, and categorizing elements in the selected papers in order to establish a framework for further analysis (Gibbs, 2018, p. 38). To minimize coding bias, each category description was thoroughly discussed by the authors before the coding process started. The authors completed the coding individually at first and then the coding results were compared. Differences were thoroughly scrutinized and discussed before reaching a common decision. Coding challenges included overlapping categories and the boundaries between main and sub-perspectives. Table 2 shows how the selection of papers was coded to the different analytical categories. Values assigned within the main categories in Table 2 are *Yes*, *No*, and *Partly*. *Yes* implies that the category represents the overriding focus of the present paper. *Partly* implies that this focus is represented and carries a certain importance, but it is not the overriding focus of the paper. *No* implies that this focus is not present or is only briefly mentioned.

The third phase involved qualitative interpretations and the development of analytical themes that went beyond the content of the selected studies by looking into the patterns transcending the individual studies. Four themes in form of stances for understanding differentiation were developed – Stance A: *Differentiation as individualization*, Stance B: *Differentiation as adaptation to specific groups*, Stance C: *Differentiation as adaptations in diverse classrooms*, and Stance D: *Differentiation in a system perspective*.

### Description of the selected papers

The selected papers included 19 empirical studies and 9 literature reviews published in the period 2000 to 2016. They were distributed equally during the whole period and exhibited a diversity of origin and context as shown in Table 3.

Papers from English-speaking countries dominated the final selection. This was to be expected because all papers written in languages other than English, Norwegian, Danish, or Swedish were omitted by the selection criteria. Surprisingly, only one Scandinavian study was identified even though three Scandinavian journals were incorporated in the search process. There may be several possible explanations for this. For example, the Scandinavian discussion on differentiation was at its peak in the 1980s and 1990s, which was before the included time

period, and Scandinavian discussions focusing on theoretical analysis tended to be excluded due to the search limitations. Papers from peer-reviewed journals were favoured over anthologies and textbooks, and this also tended to exclude contributions from Scandinavia.

The analysis of the 28 papers revealed 39 key terms for differentiation as displayed in Table 4. By comparing these terms and their explanations, origins, and references, we established three high-level categories accounting for differentiation: (1) *Differentiating teaching*, (2) *Differentiating students*, and (3) *Differentiating content*.

*Differentiating teaching* refers to the adaptation of teaching to individuals in heterogeneous classes by offering diversity in terms of goals, content, tempo, progression, working methods, teaching methods, and so on. The aim of differentiating teaching is to enable students to achieve their full academic potential. *Differentiating students* relates to the organization of students, both within schools and across different schools. A common thread running through all forms of differentiating students appears to be to the placement of students into groups or classes based on an assessment of their abilities. *Differentiating content* exists as a dimension in both differentiating teaching and differentiating students. A general description of differentiating content is the offering of different curricula to different categories of students, either within or between schools.

### Results: four stances in the approach to exploring the concept of differentiation

The results of this review are based on the patterns deriving from ‘focus’ in Table 2, and they explore the concept of differentiation in-depth by looking into four stances for understanding differentiation. As previously mentioned, all 28 papers included in this analysis were coded according to the focus of differentiation, from individuals to educational systems. Each paper was allocated to a single stance. The coding process resulted in four groups of similar papers and, as a result, we identified four different stances in the approach to differentiation: Stance A: *Differentiation as individualization* (six papers), Stance B: *Differentiation as adaptation to specific groups* (twelve papers), Stance C: *Differentiation as adaptations within diverse classrooms* (eight papers), and Stance D: *Differentiation in a system perspective* (two papers).

#### Differentiation as individualization

The stance *Differentiation as individualization* is characterized by an emphasis on the uniqueness of each students’ learning process as essential for

Table 2. Final selection of papers coded according to analytical categories.

Authors/year	Context	Type of study			Use of terms DS = differentiating students DC = differentiating content DT = differentiating teaching	Focus						
		Empirical	Review	Use of terms DS = differentiating students DC = differentiating content DT = differentiating teaching		Individuals	Groups	Class	School	System		
											Yes	No
Lassibille and Gómez (2000)	International <sup>3</sup> study	Yes	No	DS/DC	No	No	No	No	No	No	No	Yes
Peetsma et al. (2001)	The Netherlands	Yes	No	DT	Partly	Yes	No	No	Partly	Yes	No	Partly
Hallam and Ireson (2003)	UK	Yes	No	DS	No	Yes	No	Yes	Partly	Partly	No	No
Tieso (2003)	USA	No	Yes	DS/DC	No	Yes	No	No	No	No	No	No
Tomlinson et al. (2003)	USA	No	Yes	DT	Partly	No	No	Yes	Yes	No	No	No
Callahan (2005)	USA	Yes	No	DS/DC	No	Yes	No	No	No	No	No	No
Ireson and Hallam (2005)	UK	Yes	No	DS	Partly	Yes	No	Yes	Partly	No	No	No
Terwel (2005)	The Netherlands	No	Yes	DC/DS	No	Yes	No	Yes	No	No	Partly	No
Subban (2006)	Australia	No	Yes	DT	Partly	No	Yes	No	Yes	No	No	No
Carolan and Guinn (2007)	USA	Yes	No	DT	Partly	No	No	Yes	Yes	No	No	No
Van Tassel-Baska et al. (2007)	USA	No	Yes	DT	Partly	No	No	No	No	No	No	No
Kyriakides and Creemers (2008)	Cyprus	Yes	No	DT	Yes	No	No	Yes	Partly	No	No	No
Ireson and Hallam (2009)	UK	Yes	No	DS	Partly	Yes	No	Yes	Yes	Partly	No	No
Goddard et al. (2010)	USA	Yes	No	DT	Partly	No	Yes	Yes	Partly	Yes	No	No
Schofield (2010)	International Study <sup>4</sup>	No	Yes	DS/DC	No	Yes	No	Yes	No	Yes	Partly	Partly
Verachert et al. (2010)	Belgium	Yes	No	DT	Yes	No	No	No	Partly	No	No	No
Logan (2011)	USA	No	Yes	DT	Partly	No	No	Yes	Yes	Yes	No	No
Belfi et al. (2012)	International study <sup>5</sup>	No	Yes	DS	No	Yes	No	No	Partly	Partly	No	No
De Jager (2013)	South Africa	Yes	No	DC/DT	No	Yes	No	No	Yes	Yes	No	Partly
Martin (2013)	USA	Yes	No	DT	Yes	No	Yes	No	No	No	No	No
Prain et al. (2013)	Australia	Yes	No	DC	Yes	No	No	No	Partly	Partly	No	No
Dalland and Klette (2014)	Norway	Yes	No	DC/DT	Yes	No	No	Yes	Yes	Partly	No	No
Elsbree et al. (2014)	USA	Yes	No	DT	Partly	No	No	Yes	Yes	No	No	No
Mills et al. (2014)	Australia	Yes	No	DT	Partly	No	No	Yes	Yes	No	No	No
Wilkinson and Penney (2014)	England and Wales	No	Yes	DS	No	Yes	No	No	Yes	No	No	No
Gül and Vuran (2015)	Turkey	Yes	No	DT	Partly	No	No	Yes	Yes	Yes	No	No
Laine and Tirri (2016)	Finland	Yes	No	DT/DC	Yes	No	No	Yes	Yes	Partly	No	No
Zuljan (2016)	Slovenia	Yes	No	DT	Yes	No	No	No	No	No	No	No

**Table 3.** Country of origin of the selected papers.

Country/context	No. of papers
USA	9
UK	4
Australia	3
International	3
The Netherlands	2
Belgium	1
Cyprus	1
Finland	1
Norway	1
Slovenia	1
South Africa	1
Turkey	1

teaching, and 6 of the 28 papers reflected this perspective (Dalland & Klette, 2014; Kyriakides & Creemers, 2008; Martin, 2013; Prain et al., 2013; Verachtert et al., 2010; Zuljan, 2016). A common means of defining differentiation in this way is 'to teach according to individual student learning needs' (Kyriakides & Creemers, 2008, p. 187), in other words, to adapt the curriculum, tasks, and teaching to each student's individual abilities (Dalland & Klette, 2014). Hence, taking individual differences into account is the essence of differentiated instruction (Verachtert et al., 2010). Instead of directing the focus on the collective needs of students, teachers should focus on individual learning needs, processes, and behaviours. Differentiation according to this stance involves 'a shift in focus from an entire group defined by commonality to an assortment of individuals' (Martin, 2013, p. 100). The goal of *differentiation as individualization* is to enable all students to meet high standards and to achieve their full academic potential and to provide optimum conditions for learning and progress (Dalland & Klette, 2014; Prain et al., 2013; Zuljan, 2016). The educational context is not paid attention to in this stance. Individualization is the significant principle, and where the individualization takes place (whole class,

groups, etc.) is of less importance. Differentiation within this stance focuses on maximizing individual achievement without being concerned with the individual's belonging within the class community.

In terms of individual differences, both personal characteristics and more contextual issues are identified, but the former provide by far the most common explanations for differences among students. These include *thinking style*, *personality type*, and *aptitude* (Kyriakides & Creemers, 2008); *gender* and *self-regulation* (Dalland & Klette, 2014); *preferences* and *learning style* (Martin, 2013); *readiness* and *learning profiles* (Prain et al., 2013); *foreknowledge*, *motivation*, *self-efficacy*, *expectations*, and *linguistic ability* (Zuljan, 2016); *ability* (Kyriakides & Creemers, 2008; Zuljan, 2016); *achievement* and *season of birth* (Verachtert et al., 2010); and *interests* (Prain et al., 2013; Zuljan, 2016). Further contextual characteristics relate to *socioeconomic status* (Kyriakides & Creemers, 2008) and *cultural and social background* (Zuljan, 2016). Emphasizing personal characteristics over contextual issues reinforces the interpretation that differentiation within this stance is perceived as individualization.

### **Differentiation as adaptation to specific groups**

Essential to the stance *Differentiation as adaptation to specific groups* is the identification of specific groups of students, often addressed in terms of ability, or sometimes in terms of language skills or gender. Twelve of the 28 papers reflected this stance for understanding differentiation (Belfi et al., 2012; Callahan, 2005; Elsbree et al., 2014; Hallam & Ireson, 2003; Ireson & Hallam, 2005, 2009; Laine & Tirri, 2016; Schofield, 2010; Terwel, 2005; Tieso, 2003; Van Tassel-Baska et al., 2007; Wilkinson & Penney, 2014). Three thematic areas within this

**Table 4.** Key terms for differentiation.

Differentiating teaching	Differentiating students	Differentiating content
Differentiated classroom learning	Ability groupingBanding	Content differentiation
Differentiated activities	Differentiate pupilDifferentiated systems	Curriculum differentiation
Differentiated assignmentsDifferentiated educational support	Mixed-abilitySettingStratification	Curriculum compacting
Differentiated instruction	Streaming	Differentiation of the curriculum
Differentiated learning	Streams	Curriculum modification
Differentiated materials	Tracking	Specialized curriculum
Differentiated reinforcement	Tiered systems	Stratified curriculum
Differentiated tasks		
Differentiated teaching		
Differentiation		
Differentiation plan		
Differentiation strategies		
Individualized teachingInstructional differentiation		
Internal differentiation		
Learning differentiation		
Lesson differentiation		
Process differentiation		
Product differentiation		
Pedagogical differentiation		



stance were identified: *gifted and talented students* (Laine & Tirri, 2016; Tieso, 2003; Van Tassel-Baska et al., 2007), *secondary English learners* (Callahan, 2005; Elsbree et al., 2014), and *ability grouping in general* (Belfi et al., 2012; Hallam & Ireson, 2003; Ireson & Hallam, 2005, 2009; Schofield, 2010; Terwel, 2005; Wilkinson & Penney, 2014).

The selected papers on *gifted and talented students* were based upon the idea that students within this specific group have shared needs and therefore have some common preferences when it comes to teaching and learning (Laine & Tirri, 2016; Tieso, 2003; Van Tassel-Baska et al., 2007). The assumption of shared needs is, for example, expressed as follows: ‘The literature in gifted education suggests that a teacher’s use of differentiation strategies is the link to differentiated programs and services for this special population’ (Van Tassel-Baska et al., 2007, p. 84). Differentiation for gifted and talented students, as presented by Tieso (2003) and Van Tassel-Baska et al. (2007), builds on the idea of a best practice that may lead to higher achievement among gifted and talented students regardless of whether ‘they reside in an enrichment or resource room or the regular classroom’ (Tieso, 2003, p. 29). Laine and Tirri (2016) focus on gifted students in mixed ability classrooms, but like Tieso (2003) and Van Tassel-Baska et al. (2007), they emphasize the need for differentiation in the form of more complex and challenging learning activities for this specific group of students.

By outlining some common educational needs for *secondary English learners*, Elsbree et al. (2014) also approach differentiation as adaptation to a specific group. According to the authors, differentiation for this group should be based on multicultural education, effective strategies for teaching secondary English learners, social justice, and differentiated instruction, but with an explicit focus on language learning. Teaching should take into account the learner’s level of readiness, proficiency in English, learning profile, and interests (Elsbree et al., 2014). When investigating the effects of track placement of the same group of students, Callahan (2005) found that placing students in low-track programmes leads to students falling further behind. Thus, the use of ability grouping contributes to the much-discussed achievement gap.

The papers addressing *ability grouping in general* involve a more critical perspective on the consequences of different forms of ability grouping (Belfi et al., 2012; Callahan, 2005; Hallam & Ireson, 2003; Ireson & Hallam, 2005, 2009; Schofield, 2010; Terwel, 2005; Wilkinson & Penney, 2014). This perspective is characterized by a focus on inequality between groups by investigating ability grouping

and achievement gaps (Schofield, 2010), how school structures produce inequality (Terwel, 2005), how schools facilitate and/or constrain student’s learning and potential achievement through the use of ability grouping (Wilkinson & Penney, 2014), and the consequences for individuals of ability grouping (Ireson & Hallam, 2005, 2009). Factors such as socioeconomic status, ethnicity, behaviour, and motivation play important roles in student placement (Callahan, 2005; Schofield, 2010; Wilkinson & Penney, 2014), and teaching ability groups or sets is therefore considered problematic in terms of their homogeneity because such groups will include students with significant variations in attainment and learning preferences. Allocation to different sets or ability groups and offering variety in content and teaching methods thus presents students with a selection of educational opportunities (Callahan, 2005; Schofield, 2010; Terwel, 2005; Wilkinson & Penney, 2014). Offering a variety of opportunities to different groups entails widening the achievement gap between student groups and undermining the achievement of those allocated to lower sets or ability groups (Schofield, 2010; Terwel, 2005; Wilkinson & Penney, 2014). In addition to widening the achievement gap between groups of students, it is also emphasized that ability grouping generates contrasting impacts for high- and low-achieving students, including social stigmatization, reduced academic expectations, decreased motivation and increased disenchantment (Wilkinson & Penney, 2014), decreased school well-being and liking for school (Belfi et al., 2012; Ireson & Hallam, 2005), lower self-esteem and greater alienation (Hallam & Ireson, 2003), and reduced academic self-concept (Belfi et al., 2012; Ireson & Hallam, 2009). This practice tends to produce persistent social, attitudinal, and cognitive inequalities that have a negative impact on student interaction (Terwel, 2005). Lack of mobility between groups is well known and has long-term implications for access to further educational opportunities and employment (Callahan, 2005; Terwel, 2005; Wilkinson & Penney, 2014).

As we can see, there is a tension between two extremes within this stance for understanding differentiation. Papers addressing specific groups of learners – *gifted and talented students* and *secondary English learners* – argue that grouping students is a prerequisite to meeting their common educational needs (Callahan, 2005; Elsbree et al., 2014; Laine & Tirri, 2016; Tieso, 2003; Van Tassel-Baska et al., 2007). Papers about *ability grouping in general* are more critical to the use of ability grouping, specifically addressing concerns for social justice and individual consequences of ability grouping (Belfi et al., 2012; Hallam & Ireson,

2003; Ireson & Hallam, 2005, 2009; Schofield, 2010; Terwel, 2005; Wilkinson & Penney, 2014).

### **Differentiation as adaptations within diverse classrooms**

The stance *Differentiation as adaptations within diverse classrooms* is characterized primarily by its emphasis on teaching context, which includes the heterogenic classroom. To meet the needs of all students in a diverse classroom, differentiation is a necessary tool for adapting teaching. Even though there are some aspects of differentiation as individualization (Stance A) within this stance as well, the emphasis is on the mixed classrooms as teaching context. This establishes a core difference between Stance A and Stance C.

Eight of the 28 papers reflect a perspective on differentiation as adaptations within diverse classrooms (Carolan & Guinn, 2007; Gül & Vuran, 2015; De Jager, 2013; Logan, 2011; Mills et al., 2014; Peetsma et al., 2001; Subban, 2006; Tomlinson et al., 2003). Heterogeneity and diversity in groups is more or less a prerequisite within this perspective because 'today's classrooms are now defined by diversity' (Logan, 2011, p. 2). Within this stance, differentiation can be defined as 'activities that are designed to address the needs of all learners by modifying and changing the content, assessment approaches and learning and teaching strategies in the classroom' (De Jager, 2013, p. 81). Instead of focusing on individual differences as in Stance A, the attention is paid to *all* students. *Diverse classrooms* carry different meanings across the papers. Subban (2006, p. 938) describes the diverse classroom as including 'students with disabilities, students with language backgrounds other than English, students with imposing, emotional difficulties and a noteworthy number of gifted students'. The focus in Gül and Vuran (2015) is to include children with special needs in regular classrooms. De Jager, on the other hand, addresses a broader range of students by employing more overall categories for student diversity such as 'physical, behavioural, emotional or based on socio-economic and linguistic factors' (De Jager, 2013, p. 81). Common to all papers is that differentiation or differentiated instruction is needed in order to address learner differences in regular classrooms (Tomlinson et al., 2003). The framework for differentiated instruction by Tomlinson et al. seems to have a strong position in the field of differentiation as adaptations within diverse classrooms, as she is cited in several other selected papers (Gül & Vuran, 2015; Logan, 2011; Mills et al., 2014; Subban, 2006). According to Tomlinson et al. (2003), differentiated instruction is about paying attention to students'

variance in readiness, interests, and learning profiles and about making adaptations within both content, process, and product. More specifically, Tomlinson et al. claim: 'Differentiation can be defined as an approach to teaching in which teachers proactively modify curricula, teaching methods, resources, learning activities, and student products to address the diverse needs of individual students and small groups of students' (Tomlinson et al., 2003, p. 121).

The papers within Stance C present two different goals for differentiation as adaptations within diverse classrooms. Some of the selected papers (Logan, 2011; Subban, 2006; Tomlinson et al., 2003) emphasize the importance of maximizing the opportunity for growth for all individual students and thereby 'tak[ing] full advantage of every student's ability to learn' (Subban, 2006, p. 940). In this way, individualization of teaching, in the form of differentiated instruction, becomes a necessary tool for the creation of diverse classrooms that work for all students. Other papers pay more intention to differentiation as a way of expanding the class community to increase inclusion (Gül & Vuran, 2015; De Jager, 2013; Peetsma et al., 2001), or even as valuing differences as an asset (Carolan & Guinn, 2007; De Jager, 2013; Mills et al., 2014). In this way, student diversity is seen more as opportunities for enrichment rather than as a burden in learning (De Jager, 2013, p. 81). Differentiation is thus about using a 'variety of teaching methods so that they can provide students with equal opportunities to learn and create a collaborative learning environment for students in which students interact with both the teacher and the other students' (Gül & Vuran, 2015, p. 187). The intention is to create 'classrooms that [are] conducive to all students receiving a high quality education' (Mills et al., 2014, p. 337).

### **Differentiation in a system perspective**

The stance *differentiation in a system perspective* investigates the significance of contextual factors such as school culture and leadership, educational systems, and educational policies as conditions for differentiation. This stance explore differentiation in a way that transcends the focus on teachers and classrooms by addressing a wider context than Stances A, B, and C. Only 2 of the 28 papers reflect a perspective on differentiation as a system-contingent concept (Goddard et al., 2010; Lassibille & Gómez, 2000).

Goddard et al. (2010) investigate how principals influence teachers' instructional norms and use of differentiated instruction within diverse classrooms. *Differentiated instruction* itself is presented in the same way as in Stance C, as a 'student-centred means of teaching' (Goddard et al., 2010, p. 337)

aiming to meet the needs of all students in classrooms characterized by academic and cultural diversity. However, instead of limiting the attention to differentiated instruction itself, the study of Goddard et al. (2010) sheds light on the *system conditions* for practice by investigating the role of school leadership. The study concludes that ‘teachers’ reports of their principal’s instructional support significantly and positively predicted the degree to which differentiated instruction was a norm in their schools’ (Goddard et al., 2010, p. 351).

The study of Lassibille and Gómez (2000) brings the differences between educational systems into focus by comparing primary and secondary educational systems in 29 countries. In this study, differentiation relates to *differentiated systems* (sorting students at a very early age) versus *non-differentiated systems* (not sorting students during compulsory education), reporting that ‘[i]n some countries, students follow the same curriculum to the end of their compulsory education; in others, they are differentiated and sorted into different streams very early on’ (p. 18). However, this study points out the great variation of educational systems between countries and how this creates different conditions for teaching practices.

## Discussion

The purpose of this configurative review is to contribute to a much-needed overview of differentiation by investigating how the concept appears in international research and to what extent it takes a wider educational context or policy into account. To sum up the findings in this study, differentiation appears as a complex and compound idea, conceptualized mainly as individualization, adaptation to specific groups, or adaptations within diverse classrooms. Only 2 of the 28 studies went beyond a focus on teachers and classrooms by addressing contextual conditions at an organizational or system/policy level.

Investigating a versatile concept such as differentiation involves challenges concerning clarity of the concept. Göransson and Nilholm (2014) report similar challenges in their review study on inclusion, concluding that there is a lack of clarity regarding the *operative* meaning of inclusion. This statement led to a discussion among researchers on whether it is possible to establish a clear operationalization or conceptualization of inclusion (Dyson, 2014; Florian, 2014; Haug, 2014a). The same goes for differentiation. This review finds that the concept of differentiation is used in different ways and within different educational contexts, and this supports the results of other recent literature reviews on differentiation (Bondi et al., 2019; Graham et al., 2021). At the same time, our endeavour to give an overview of

how differentiation is conceptualized in empirical studies and literature reviews over the last two decades contributes to a clearer picture of the field. Rather than giving up the search for clarity, it is important to map different meanings and traditions behind differentiation to understand the complexity of the concept. The four identified stances for understanding differentiation range from focussing on individuals to focusing on specific groups, individuals within diverse classrooms, and system factors for differentiation. A wide variety of key terms are employed for differentiation – sometimes overlapping, sometimes with different focuses, and sometimes contrasting. Altogether, this contributes to weak consensus and a multi-faceted understanding of the concept of differentiation. Because this configurative review builds upon the Scandinavian use of the concept, it includes both pedagogical and organizational differentiation. Bondi et al. (2019) and Graham et al. (2021) problematize how ‘practices, such as ability streaming and segregation’ (Graham et al., 2021, p. 162) are described as differentiation. This highlights a difference in perception of the concept between a Scandinavian approach and an American/Australian approach. The argument that ability grouping should not be implemented in the name of differentiation because it is incompatible with inclusion (Graham et al., 2021) is constructive when limiting differentiation to differentiated instruction (Graham et al., 2021; Tomlinson, 2014, 2017). At the same time, while the most radical forms of organizational differentiation are no longer used in Scandinavia (Blossing et al., 2014), in-class ability grouping – or setting – is still seen as a means of differentiation (The Danish Evaluation Institute, 2011; The Swedish National Agency for Education, 2009; Vibe, 2010). Across these differences in use of the concept, the most timely question is still the same; which understanding of the concept of differentiation is required for it to be productive in terms of inclusion?

Differentiation as individualization (Stance A) may involve some elements of inclusion, in that achievement for all can be seen as a dimension of inclusion (Florian et al., 2016; Haug, 2014b; Persson & Persson, 2012). Still, there is a lack of emphasis on the idea that every student should be a valuable member of the class community *regardless* of their individual differences, an aspect that is essential to inclusion (Florian, 2014). When differentiation is used to discuss adaptation to specific groups (Stance B), the picture is more complicated. On the one hand – the papers on differentiation for gifted and talented students (Laine & Tirri, 2016; Tieso, 2003; Van Tassel-Baska et al., 2007) all make use of Tomlinson’s framework for differentiated instruction. However, while Tomlinson’s (2014, 2017) context for teaching is

*diverse classrooms* (Stance C), the focus in these papers is how to differentiate instruction for *one specific group*. This discussion is related to what Hjörne (2004) refers to as *excluding for inclusion*, or what Ainscow and Miles (2008) refer to as understanding inclusion as concentrating on *groups vulnerable to exclusion*. On the other hand – papers addressing ability grouping in general (Belfi et al., 2012; Callahan, 2005; Hallam & Ireson, 2003; Ireson & Hallam, 2005, 2009; Schofield, 2010; Terwel, 2005; Wilkinson & Penney, 2014) draw attention to how ability grouping in all forms can be seen as *segregating* and *excluding* practises. Stance C, *differentiation as adaptations within diverse classrooms*, uses the diverse classroom as a starting point. Diverse classrooms are also a core principle for inclusive education where providing equal opportunities for participation in ordinary schools and classrooms for all students is essential (UNESCO, 1994). According to this stance, approaching differentiation as adaptations within diverse classrooms can offer good conditions for working with inclusion. However, according to this stance looking at the classroom alone is not enough to increase inclusion. Inclusion in the form of EFA also involves looking at how classroom practice depends on structures related to system-oriented factors such as school organization, education systems, and policies (Ainscow & Miles, 2008; Operti et al., 2013; UNESCO, 1990, 1994, 2000, 2008, 2015).

Looking into the analysis of the four stances for understanding differentiation, in most of the papers differentiation is constrained to the levels of individuals, group, or classrooms. Even though differentiation is closely related to teaching practices, and thereby takes place inside the classrooms, schools and educational systems with their underlying policies and traditions provide important premises for what is possible to do in classrooms. This is clearly pointed out by Goddard et al. (2010) (Stance D). The study of Lassibille and Gómez (2000) also illustrates the wide range of differences in national education systems. Studying differentiation across national borders implies studying differentiation across a variety of systems and educational policies, and the perception of differentiation will to some extent rely on differences in contextual factors. Thus, it is worth noting that very few studies in our review account for the system context in which the phenomenon of differentiation is studied. Accounting for differentiation without taking contextual, policy, or system-oriented factors into account can risk developing an instrumental understanding of differentiation. Differentiation is then reduced to a tool for teaching, a tool that does not support inclusion. It is interesting to ask whether discussions on differentiation should continue to be preoccupied with differentiating students and differentiating teaching

at the classroom level. Teaching and learning do not co-exist in a vacuum. Instead, conditions that evolve and decisions that are made at higher levels are important factors in determining what can be accomplished in terms of teaching and learning at the classroom level, and these should therefore be included to a greater degree in the concept of differentiation.

Dale and Wærness (2003) point out the benefits of a broader and more contextual understanding of the concept of differentiation. Differentiation in the view of Dale and Wærness (2003) involves the creation of school communities that can address student diversity, but without necessarily assessing and categorizing students in advance. By arguing for a shift in perspective from the individual student to the educational system and its institutions, their perspective does not simply reduce differentiation to a set of didactical measures intended to adapt teaching to each student in the classroom. Neither does it reduce differentiation to an organizational measure offering different groups of students a variety of teaching methods. Our configurative review of 28 scientific papers representing a broad range of national affiliations demonstrates that there still is a lack of contextual factors at play in the differentiation discourse.

### **Limitations of the configurative review**

By limiting our searches to empirical studies and literature reviews, we did not capture literature of a more theoretical or discursive nature. Such literature could have contributed to an even more comprehensive discussion but would also have introduced complications into what is already a multi-faceted field. The selection of only 28 papers cannot be expected to reflect the content of all literature on differentiation, and these papers' contributions are limited to the identification of potentially interesting patterns that might generate debate on the levels at which differentiation may be located.

Given the fact that all the reviewed papers base themselves on a variety of contexts and school systems, and the limited presentation of these contexts, there will always be uncertainties regarding the consistency of cross-contextual comparisons. Moreover, the 28 papers are all written in English, including those referring to contexts outside the English-speaking world. For this reason, we have to consider whether the use of a common language has in fact resulted in a harmonization of terminology and its use. With this being said, the review has succeeded in revealing some significant commonality in the use of key terms for differentiation, which in turn may indicate the existence of a common 'core' in the approach to differentiation.



## Conclusion

Differentiation is a multi-faceted and contextual concept that is not easy to constrain or study. This configurative review has aimed at investigating how the concept of differentiation has been conceptualized in recent empirical and literature reviews. If practises such as *differentiation as adaptation within diverse classrooms* (Stance C) are to contribute to a more inclusive school, they must take a broader and more contextual understanding of the concept of differentiation into account. A more system-oriented focus on differentiation does not invalidate existing perspectives and established knowledge on differentiation. However, it offers a broader picture by considering the conditions, policies, practices, and beliefs at the level of the school and at the level of educational systems and structures.

## Notes

1. Norwegian terms: *pedagogisk differensiering, organisatorisk differensiering*. Swedish terms: *pedagogisk differentiering, organisatorisk differentiering*. Danish terms: *elevdifferentiering, undervisningsdifferentiering*.
2. Because all papers included in the final selection were peer-reviewed, no further quality assessment was carried out.
3. Comparative study, data were collected from 29 countries.
4. Defined by authors as ‘developed countries outside the USA’.
5. Literature review covering studies from a wide range of countries.

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