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## Differentiation and individualisation in inclusive education: a systematic review and narrative synthesis

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### ABSTRACT

This study integrates research about differentiation and individualisation in inclusive education since the UN Convention on the Rights of Persons with Disabilities in 2006 (United Nations, 2006). The concept of inclusive education for all learners increases the requirement for teachers to create educational spaces that encourage stimulating teaching and learning processes. Accordingly, a methodological shift from the traditional 'one-size-fits-all' model to individualised teaching and learning offers a starting point for educational equity. The aim of this paper is to investigate the progress of differentiated and individualised teaching practices in inclusive classroom settings considering collaboration and teamwork, instructional practices, organisational practices and social/emotional/behavioural practices (see Finkelstein, Sharma, & Furlonger, 2019. "The Inclusive Practices of Classroom Teachers: A Scoping Review and Thematic Analysis." *International Journal of Inclusive Education*, 1–28). Results of a criteria-based review considering papers from 2008 to December 2018 encompass 17 articles that were included in the narrative synthesis. Results indicated that the following aspects are characteristic of inclusive education: collaboration and co-teaching, grouping, modification (of assessment, content, extent, instruction, learning environment, material, process, product and time frame), individual motivation and feedback, and personnel support of students. Implications of the findings and gaps in the research have been outlined.

### KEYWORDS

Inclusive education;  
differentiation;  
individualisation; inclusive  
teaching practices;  
systematic review

## Introduction

The establishment of inclusive educational settings within the primary and secondary levels of school system all over the world has gained notable significance against the background of legislative and educational policy changes. The development of an inclusive school environment for students with special needs is a targeted agenda in compulsory schools. Article 24 of the UN Convention on the Rights of Persons with Disabilities provides a clear understanding of education for all:

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States Parties recognize the right of persons with disabilities to education. With a view to realizing this right without discrimination and on the basis of equal opportunity, States Parties shall ensure an inclusive education system at all levels and lifelong learning. (United Nations 2007)

This ensures that equality of opportunity is warranted by opening and providing access to the regular school system for all students, regardless of their individual characteristics. However, educational stakeholders have to deal not only with the postulate of ‘equal opportunities’, but also with enabling educational justice for all (Xu 2012; Bellmann and Merkens 2019). Therefore, the demand for teachers to create educational spaces that encourage stimulating teaching and learning processes for all students increases.

### **Domains of inclusive teaching practice**

Finkelstein, Sharma, and Furlonger (2019) outline five observed aspects of inclusive practice that allow teachers to design lessons that dismantle educational barriers for students: (1) collaboration and teamwork, (2) instructional practices, (3) organisational practices, (4) social/emotional/behavioural practices and (5) determining progress. The domain *collaboration and teamwork* includes practices that involve the cooperation of teachers with other stakeholders, e.g. other teachers, language experts, speech therapists, psychologists, physiotherapists, as well as with family members and students. The category *instructional practice* is concerned with teachers’ creation and organisation of teaching and learning processes. It deals with the question of how didactic content is transmitted to the students (e.g. differentiated instruction, participative teaching and learning). *Organisational practices* include the modification of the learning environment and the setup of the classroom to dismantle learning barriers and enable a stimulating and motivating learning environment for every student. The category *social/emotional/behavioural practices* deals with how teachers encourage a positive classroom environment where students feel socially and emotionally included, one in which their behavioural needs are taken into account (e.g. clear communication of behavioural expectations and rules, constructive feedback, motivation). The final category, *determining progress* involves individualised assessment and monitoring of students’ achievements (e.g. different assessment methods, individual education plans).

### **Differentiation and individualisation**

The differentiated and individualised design and stimulation of teaching and learning processes is a didactic approach that attempts to ensure educational justice in the sense of a participatory fairness and is linked to all five categories of inclusive teacher practice. Based on the recognition of the plurality of students within a class community, this requires the teachers’ didactic reactions and adaptations to students’ individual needs. Accordingly, a methodological shift from the traditional ‘one-size-fits-all’ model to individualised teaching and learning in response to heterogeneity offers a starting point for educational equity in the school context (Bondie, Dahnke, and Zusho 2019).

Both differentiation and individualisation have their didactic starting point in the needs of the students. Differentiation refers to a varied preparation and design of inclusive

teaching practice in a reactive way by reacting to the needs of students (while e.g. universal design of learning UDL is a proactive approach, which ensures access for all students regardless of their needs, Griful-Freixenet et al. 2020). In this way, an attempt is made to respond to the group-specific needs of students within a class. The goals cover a wide range of possibilities for fulfilment (e.g. to develop competence in numeracy or literacy) and are the same for all students, but the path to achieving them is modified and offers different possibilities considering, e.g. content, extent, material and instruction and can be displayed as the macro level of adapted inclusive teaching practice. Individualisation respects individual needs of students more on a micro level and is paced to the educational needs of individual students. Content, extent, material, support, assessment etc. are customised to the students' needs. Didactic approaches are dependent on individual requirements (Strobel et al. 2007; Tomlinson 2014).

Differentiation and individualisation are designed to lead to a simultaneous motivation of all students to master individual tasks and achieve goals (Tomlinson 2014; Coubergs et al. 2017). In line with this, Kratochvílová and Havel (2013) outline the application of differentiated and individualised teaching approaches as a significant feature of inclusive education. Although these practices require a systematic implementation approach, inclusive practices are in some instances performed unconsciously in an unplanned way (Chan et al. 2002; Yuen, Westwood, & Wong, 2005).

### **Aim of the current study**

This study is based on the assumption that the ratification in 2007 of the UN Convention has increased the awareness by educational stakeholders of the need to develop an inclusive school system. Hence, research conducted since 2007 has been synthesised to examine the extent of implementation of inclusive teaching approaches considering differentiation and individualisation from the perspectives of students, teachers and other stakeholders. The review is guided by the following research question:

What types of differentiated and individualised teaching practices are implemented within inclusive classroom settings considering the five categories of (1) collaboration and teamwork, (2) instructional practice, (3) organisational practice, (4) social/emotional/behavioural practice and (5) determining progress?

### **Method**

The aim of the systematic literature review was to extract key terms, analogies and outcomes from the individual contributions and to reach conclusions regarding the implementation of inclusive teaching practice in consideration of differentiated and individualised approaches. The systematic review was conducted in four stages: (1) development of aims and the research question as well as selection strategies with inclusion and exclusion criteria, (2) literature search through systematic one-by-one journal screening and database searches, (3) selection process in the following order: title and abstract screening, full text screening, quality assessment, data extraction and (4) study analysis and narrative synthesis of outcomes.

### *Literature search*

The literature search can be divided into two stages. Firstly, a systematic hand-screening of high impact factor journals (Q1) was conducted in the field of special and inclusive education and educational research. In addition, a preliminary database search was conducted. The articles considered adequate were sorted by journal in which they were published. If several articles of a journal were considered to be adequate according to their title, the journal concerned was added to the hand-screening. Given the United Nations Convention (2007) as a chronological starting point, all published issues of 13 selected journals (American Educational Research J., Australasian J. of Special Education, Educational Researcher, European J. of Special Needs Education, Frontline Learning Research, International J. of Inclusive Education, International J. of Special Education, J. of Research in Special Educational Needs, J. of Teacher Education, Learning and Instruction, Teacher Education and Special Education, Teaching and Teacher Education, The J. of Special Education) from January 2007 to January 2019 were searched for suitable articles by title. Through this process, key search terms, which seem to occur frequently regarding the selected subject matter were developed. These terms included various combinations of *includi\**, *teach\**, *practice*, *different\**, *instruct\**, *class\**, *divers\**, *individual\**. Using the key words derived from this process, databases relevant to the topic were checked for matching contributions according to their title. The screened databases were Web of Science, ProQuest Education Database and JSTOR. The number of articles selected during the given time period totalled 695. The procedure of using both hand search and databases for pre-selection resulted in a selection of 307 duplicates, which were removed before the title and abstract screening.

### *Inclusion criteria*

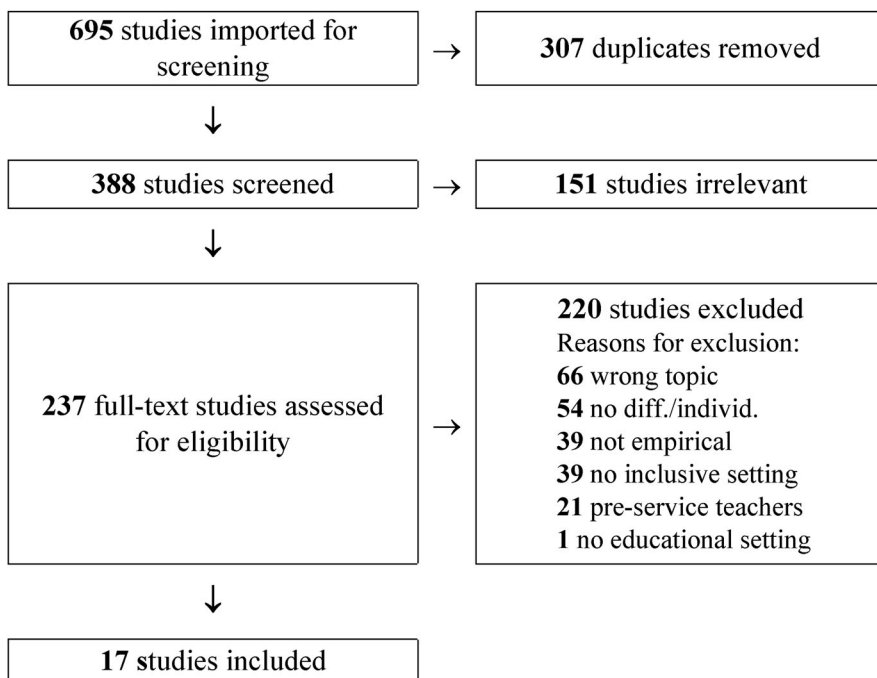
In the course of the first selection procedure, 388 scientific publications were included in the sample on the basis of the title. In the next steps, the title and abstract screening as well as the full text selection was conducted by two independent raters and assessed according to preassigned inclusion criteria. An article had to meet the following criteria to be considered appropriate for the systematic review:

- **Relevance to the topic:** The study focuses on teachers' use of differentiation or individualisation as inclusive teaching approaches in the context of inclusive classroom settings.
- **Setting:** The study took place in an inclusive educational setting at the primary or secondary level (The definition of inclusive setting is up to the authors of the articles whether they consider the investigated setting as inclusive).
- **Sample:** The specification of the desired sample is broadly defined. Perspectives of students, in-service teachers, other educational stakeholders or external observers are included. Studies focusing on the teaching practices of pre-service teachers were excluded.
- **Date of publication:** The article was published between January 2007 and January 2019.
- **Design:** The article contains empirical research (quantitative, qualitative or mixed-methods designs).

- Language: The language of the publication is English.
- Differentiation and/or individualisation: The study must assess concrete features of differentiated and/or individualised teaching practice in inclusive settings.

With the theoretical background and previous research in mind, the criteria, considering the relevance and setting of the topic, seem to be of monumental importance. As the state of the research shows, studies concerning inclusive teaching practice often focus on teachers' attitudes towards inclusion, intervention studies to help teachers implement inclusive teaching practices, or the use of inclusive approaches within regular classroom settings. Therefore, the specialisation on the implementation of differentiated and individualised teaching characteristics in inclusive settings was intended to address a gap in the research on inclusive education and inclusive teaching practice.

The decision as to whether an article met the title and abstract screening criteria, was done by deciding 'Yes' for further investigation or 'No' for exclusion; the extraction of adequate full texts was done by specifying 'include' or 'exclude' and indicating the reason for the exclusion (e.g. wrong topic, no inclusive setting, no empirical study, etc.). Conflicts in selection were eliminated by reaching a consensus among the authors on the adequacy of studies. After the title and abstract screening, 151 of 288 studies were considered irrelevant. Of full text studies, 237 were assessed for eligibility, and 23 studies were included after the full text screening. The final step consisted of quality assessment and data extraction, after which 17 articles were selected as appropriate for the final selection (see Figure 1).



**Figure 1.** PRISMA chart outlining selection process.

### *Data extraction*

Given that the design of the studies included quantitative, qualitative and mixed-methods approaches, three adapted quality assessment procedures for each article were applied. Following adjusted evaluation tools for quality assessment of studies (Long et al. 2002), all 17 selected studies were checked for quality criteria including the evaluation of potential risk of bias regarding design, setting, sample, outcome measurements, ethics, quantitative characteristics if applicable, qualitative characteristics if applicable and implications. This was done by rating each risk of bias from low to high. When the overall conclusion of the quality assessment showed a low risk of bias, basic data was extracted (see Table 1).

### *Literature analysis*

The analysis of the selected 17 articles was conducted according to the narrative synthesis approach (Popay et al. 2006), which consists of four main elements. These stages were (a) the development of a theoretical model as basis of the analysis, (b) the preliminary description of patterns across the selected studies, (c) the exploration of intersection and overlaps of the studies and (d) the assessment of the synthesis product in light of the theoretical background.

The theoretical model as analysis basis of the review assesses the range of adequacy of articles. As the objective of the review is to examine the implementation of differentiated and individualised didactic characteristics in inclusive settings, the theoretical model consists of working definitions of differentiation and individualisation. The working definitions specify the instructional concepts as didactic, reactive approaches which have their starting points in the educational needs of the students:

Differentiated instruction is an instructional approach that accommodates the diversity of students by (1) coping with student diversity; (2) adopting specific teaching strategy; (3) invoking a variety in learning activity; (4) monitoring individual student needs, and (5) pursuing optimal learning outcomes. (Suprayogi and Valcke 2016, 4)

Individualized instruction refers to the idea that each student learns differently and thus in order to accommodate these differences, instruction should be personalized, matched, or adapted to the experiences, aptitudes, and interests of each students. (Waxman et al. 2013, 405)

Given these working definitions as theory framework that contributes to the analysis and interpretation of the review's findings, the selected articles were analysed for suitable content on differentiation and individualisation.

For this review, the narrative synthesis method in the sense of a thematic analysis was used. Overarching themes from different studies (quantitative, qualitative, mixed-methods) were extracted and elaborated in an inductive approach according to the theoretical definitions at the beginning of the analytical process, which means that the analysis and the development of key themes was conducted without a previously established categorisation.

The assessment of the synthesis product in light of the theoretical background was conducted following the construct of Finkelstein, Sharma, and Furlonger (2019) regarding the five domains of inclusive teaching practices. In this way, the inductively filtered results were fed back to the theoretical findings.

**Table 1.** Extracted studies.

No.	Source	Setting	Design	Perspective of	Methods	Outcome Categories	Country	Journal
#39 (1)	Angelides and Aravi (2007)	Secondary school in Nicosia	Qualitative	External observers (observations), teachers (interviews)	Systematic observations, interviews	Content mod.	Cyprus (signature 2007, ratification 2011)	European Journal of Special Needs Education
#689 (2)	Bešić et al. (2017)	Two primary school, two New Middle schools, two vocational schools, one academic school in Styria	Qualitative	Headmasters, general education teachers, special education teachers, CISE heads	Semi-structured interviews	Content mod., learning environment mod.	Austria (signature 2007, ratification 2008)	European Journal of Special Needs Education
#146 (3)	Buli-Holmberg and Jeyaprabhan (2016)	24 schools from four municipalities in three counties (classes from 1st to 10th grade)	Qualitative	External observers	Direct observations	1:1 support outside the CR, 1:1 support in the CR, 1:group support outside the CR, flexible teaching practice	Norway (signature 2007, ratification 2013)	International Journal of Special Education
#109 (4)	Chan and Lo (2017)	Primary school in three different districts	Qualitative	Teachers	Interviews	Content mod., process mod., product mod., period mod.	Hong Kong, China (signature 2007, ratification 2008)	International Journal of Inclusive Education
#682 (5)	De Jager (2017)	Public secondary schools	Mixed-Methods	Teachers	Interviews, quantitative survey	Instruction mod., process mod., Grouping, material mod.	South Africa (signature 2007, ratification 2007)	Studies in Educational Evaluation
#32 (6)	Florian and Spratt (2013)	Primary and secondary schools	Qualitative	Teachers	Observations, semi-structured interviews	1:1 support in CR, individual motivation/feedback	Scotland (signature 2007, ratification 2009)	European Journal of Special Needs Education
#191 (7)	Humphrey and Lewis (2008)	Four mainstream secondary schools	Qualitative	Students, teachers, learning support assistants, SEN	Interviews, observations	Grouping, content mod.	UK (signature 2007,	Journal of Research in Special

*(Continued)*





Table 1. Continued.

No.	Source	Setting	Design	Perspective of	Methods	Outcome Categories	Country	Journal
				coordinators, senior management, parents (interviews), external observers (observations)			ratification 2009)	Educational Needs
#119 (8)	Lindsay et al. (2014)	Mainstream elementary classrooms	Qualitative	Teachers	Interviews	Content mod., individual motivation/ feedback, flexible teaching practice	Canada (signature 2007, ratification 2010)	International Journal of Inclusive Education
#685 (9)	Mady (2018)	Elementary and secondary schools in small urban and rural areas	Quantitative	External observers	Observations	Content mod.	Canada (signature 2007, ratification 2010)	Journal of Immersion and Content-Based Language Education
#37 (10)	Nilholm and Alm (2010)	One inclusive classroom (grade 5 and 6)	Mixed-Methods	Students, teachers (interviews, questionnaires, sociograms), external observers (observations)	Interviews, observations, questionnaires, sociograms, document analysis	Instruction mod., grouping	Sweden (signature 2007, ratification 2008)	European Journal of Special Needs Education
#176 (11)	Otukile-Mongwaketse, Mangope, and Kuyini (2016)	Primary schools	Qualitative	External observers, teachers	Observations, interviews	Content mod., extent mod., product mod., 1:1 support in CR, 1: group support	Botswana (no action)	Journal of Research in Special Educational Needs
#112 (12)	Russak (2016)	Elementary schools	Quantitative	Teachers	Questionnaire	Assessment mod., content mod.	Israel (signature 2007, ratification 2012)	International Journal of Inclusive Education
#105 (13)	Saloviita (2018)	Comprehensive school	Quantitative	Teachers	Questionnaire	Collaboration & co-Teaching, grouping, content mod.	Finland (signature 2007, ratification 2016)	International Journal of Inclusive Education
#349 (14)	Sharma and Sokal (2016)	General public school	Quantitative	External observers, teachers	Observations, questionnaire	Assessment mod., grouping, instruction mod.	Canada (signature 2007, ratification 2010)	Australasian Journal of Special Education

#121 (15)	Tarr, Tsokova, and Takkunen (2012)	One school renowned for its inclusive practice	Qualitative	External observers, school staff	Observations, interviews, questionnaire	Material mod., process mod., grouping, content mod., 1:1 support in CR, collaboration & co- teaching	Finland (signature 2007, ratification 2016)	International Journal of Inclusive Education
#33 (16)	Vehkakoski (2012)	One part-time Finnish elementary special education setting	Qualitative	External observers	Videotaped observations	Extent mod., content mod., grouping	Finland (signature 2007, ratification 2016)	International Journal of Special Needs Education
#246 (17)	Vermeulen, Denessen, and Knors (2012)	Mainstream secondary schools	Qualitative	Teachers	Interviews	Instruction mod.	Netherlands (signature 2007, ratification 2016)	Teaching and Teacher Education

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Through discussion of the empirical results and evidence of the individual scientific contributions, a ‘map of knowledge’ (Hart 2018), i.e. a visualised representation of the state of research, was the product of the narrative synthesis.

## Results

In total, 17 studies were considered eligible and were analysed against the background of the research question (see Table 1). Table 1 provides insight into the extracted data and outcomes. Across the selected studies, the characteristics and specifications vary widely. The geographical placement of the studies covers four continents: Europe (Austria, Cyprus, Finland, the Netherlands, Norway, UK, and Sweden), North America (Canada), Africa (Botswana, South Africa) and Asia (Hong Kong, Israel). Of 17 studies, 11 used a qualitative research approach to investigate implemented inclusive teaching practice. Four studies contained a quantitative design, and two studies combined both empirical approaches in the sense of a mixed-methods study. The research methods included interviews, questionnaires, observations and document analyses. Eight of the selected studies used a combination of at least two different methods to examine differentiation and individualisation of teacher practices.

The extracted studies highlighted the perspectives of general and special education teachers, students, headmasters, learning support assistants, special education coordinators, educational managers, parents and external observers. The educational settings included a focus on primary education (10), secondary education (10) and comprehensive education (two), which indicates that several studies investigated multiple educational settings.

By extracting outcome information about differentiation and individualisation within each article, commonalities were identified based on key passages in the text and summarised in thematically overarching categories. When investigating which types of differentiated and individualised teaching practices were implemented within the context of inclusive classroom settings, five categories of practices were established. In order to illustrate the results of the systematic analysis of the 17 selected studies, the research question is answered in two separate sections. In the first section, the inductively developed categories are presented. For this purpose, connections between the individual studies through a within-study analysis are established and concise text extracts are given for clarification. The second part of the result presentation comprises the allocation of the developed categories to the five domains of inclusive teaching practice. Specifically, this approach of presenting the results attempts to illustrate which types of differentiated and individualised teaching practice are implemented in inclusive classes considering the categories of: collaboration, instruction, organisation, social/emotional/behavioural practice, and assessment and monitoring.

### *Collaboration and co-teaching*

The analysis of articles focusing on differentiated and individualised characteristics of inclusive teaching practice shows that collaboration, co-teaching and collaborative educational organisation of lessons was mentioned in four articles (Nos. 1, 2, 13, 15) as implemented practice. In connection with differentiation and individualisation, Angelides and Aravi (2007) outline cooperative work of teachers as a possible approach to develop a

multifaceted set of inclusive teaching practices and make learning processes accessible for every student in one class. In this sense, the collaboration of multiple teachers or organised clusters of teams within the staff facilitate the creation of differentiated and individualised lessons considering effective methods and techniques that foster every student. Tarr, Tsokova, and Takkunen (2012, 702) found that planned cooperation between teachers and other stakeholders can lead to stronger confidence in pedagogical action and in dealing with heterogeneous students in order ‘to create a fruitful context for inclusive education’.

### **Grouping**

One didactic intervention that is often justified by the demand to meet the different needs of all students in one class is grouping. Nine of the seventeen studies reported grouping strategies as being an implemented classroom practice in the context of inclusive education (Nos. 5, 6, 8, 10, 11, 13–16). Given grouping as an elaborated teaching method, there are inconsistencies as to which form of grouping corresponds to the principles of inclusive education. Vehkakoski (2012) describes grouping strategies based on the ability of students as an inflexible teaching method. Students are clearly divided into different groups and must first demonstrate certain academic achievements before they are allowed to switch groups. That implies an underlying goal of grouping by academic performance. The authors of five of the selected nine studies on this topic report grouping strategies being used as a method to support every student’s learning in the classroom. Interests and individual competencies are the focus characteristics, which define the gathering of students into diverse groups. Florian and Spratt (2013) report on statements made by a teacher whose didactic goal was to reject ‘deterministic beliefs about fixed ability’ (127). The main idea of this kind of grouping strategy is that all students, regardless of their abilities, can support their classmates’ learning processes (e.g. Lindsay et al. 2014).

### **Modification**

The modification of teaching characteristics within the studies’ educational settings is carried out on various levels. By means of the inductive development of thematic categories the following topics were extracted: modification of assessment, content, extent, instruction, learning environment, material, process, product, and time frame.

### **Assessment**

Another way to react to the special needs and learning developments of students in one classroom is the adaption of assessment and testing accommodations (Nos. 6, 9, 12, 14). Examples for the implementation of modified assessment characteristics are additional time, ignoring specific types of mistakes, oral instead of written exams, a different learning environment such as a separate room, enlarged test pages, a variation of the length of tests, and the use of dictionaries or other support materials. Another trend in assessment modification in inclusive settings is the use of peer- and self-assessment strategies rather than teacher grading systems.

### Content

Modified and tailored content, curriculum and task-related decisions of teachers considering the various needs of their students were mentioned as implemented inclusive teaching practices within 12 of the extracted studies (Nos. 1–5, 7, 9, 11–13, 16, 17). One interviewed teacher, as reported in the study of Chan and Lo (2017), argued,

If the task has a high cognitive *demand*, they can't really *cope*. Then you just make it simple enough that they can achieve it. And it doesn't necessarily [mean] everything has to be open-ended. But for those who can think, like the dyslexic children, many of them, they can think; they can speak, but they just can't read and write. Then you just need to think of ways to give them support and simplify the text. (Chan and Lo 2017, 724)

This statement also reflects the results of other studies. Above all, the simplification of content-related characteristics is at the forefront of content modification in inclusive settings. The aim is to create and set individualised achievable goals for students.

### Extent

'We are not basically simplifying the content; it is the concept we are simplifying ... so we give less work but we do not compromise quality' (Otukile-Mongwaketse, Mangope, and Kuyini 2016, 174). With this statement, a teacher interviewed justified her didactic decision to give some students twice as many tasks as others. In contrast to the modification of content, extent modification means that students get a certain amount of tasks, exercises and homework according to their competencies and abilities. The results of three studies contain this form of modification (Nos. 11, 12, 16).

### Instruction

The modification of instruction in inclusive teaching practices is often used as an umbrella term for every kind of modification within differentiated or individualised educational situations in school. In the present context, modified instruction means the adaptation of instruction and explanations as well as the preparation of content in the form of methodological diversity. Despite the specific definition of the term, results from twelve studies could be extracted (Nos. 1–3, 5, 8–10, 13–17). According to one example, the teacher modifies her instruction by talking more slowly and articulating more clearly to make it easier for target students to follow her instructions. It is clearly visible in all 12 studies that instruction modification requires a flexible and reflective adaptability of methods from the teacher.

### Learning environment

The modification of learning environment overlaps with the categories collaboration and co-teaching and material modification. Five studies dealt with this topic with regard to a flexible creation of stimulating and fruitful learning environments (Nos. 2, 3, 6, 8). One of the most mentioned types of this adaption was teaching specific students in adjoining classrooms; however, it was emphasised that not only students with special educational needs were separated from others. Regarding this specific didactic approach, the question arises to what extent the local separation of students can be seen as form of differentiation in the sense of inclusive school education or if it is just an example of exclusion under the guise of inclusion. As the authors consider it to be a form of differentiation, it is taken into

account in the results, but critically questioned in the discussion section. There are multiple reasons for enhancing learning settings to provide adequate conditions for all: no disturbances while working with both groups of students (inside and outside the regular classroom), silently working on tasks, possibility to interact with specific students, provision of individual support and adaptation to individual needs. The reported goal is to create a learning environment that is effectively available for every student.

### Material

Material modification was the subject of seven studies (Nos. 3–5, 7–9, 15). This form of adaptation deals with the adjustment of teaching materials to meet the needs of the students. The selection of adequate materials, resources as well as assistive devices, therefore, align with students' individual learning goals and support their individual academic development.

### Process

Process modification often goes hand in hand with other categories such as content, instruction and product adaptation (Nos. 4, 5, 11, 15). It consists of the creation and range of various learning activities from which students can choose. In this context, a teacher participant of the study of Otukile-Mongwaketse, Mangope, and Kuyini (2016, 174) argues

The first group was drawing the map of Botswana, the second group was asked to identify national parks and game reserves from the map while the third group was asked to paste names of national parks and game reserves on an already drawn map [by the teacher].

### Product

The adaptation of expected outcomes was reported from three extracted studies (Nos. 4, 9, 11). If one continues the illustrated example of Otukile-Mongwaketse, Mangope, and Kuyini (2016, 174), there are different outcomes produced by students. A teacher interviewed by Chan and Lo (2017, 732) stated:

The product of our core task usually is quite open-ended ... When I show it to the class, it doesn't matter, like how complex it is ... or how difficult the writing they have produced. As long as I *show* it to the class, the child, they take ownership ... They feel proud that the teacher is showing their work.

### Time frame

In order to take into account, the individual needs of pupils, three of the seventeen studies examined also refer to the issue of time frames within which specific tasks have to be completed by students (Nos. 8, 9, 12). Teachers may 'choose to provide more time, allow for breaks, not use timed assignments, remind students of the time requirements and passage of time and/or focus on timing by other means' (Mady 2018, 259).

### *Individual motivation and feedback*

Florian and Spratt (2013), Chan and Lo (2017) as well as Lindsay et al. (2014) report results considering individual motivation and feedback for students (Nos. 4, 6, 8). In the context of individual motivation, one teacher participant in the study of Lindsay et al. (2014) stated, ‘You have to motivate him through whatever his passion was. [...] It always comes back to knowing the kids and knowing what they’re passionate about and interested in’ (No. 6) (Lindsay et al. 2014, 112).

According to individual feedback in regard to individualisation, Florian and Spratt (2013) cite one participant saying,

We talk to him after school sometimes, “Well done today, you really did” ... And he started off saying, “I can’t do it” and yet I have to prove to him how he’s done it. “You have done it, you achieved it”. And then you saw him start to believe that he could do it. (Florian and Spratt 2013, 131)

This statement illustrates the mutual relationship between individual motivation and feedback and its special significance for students.

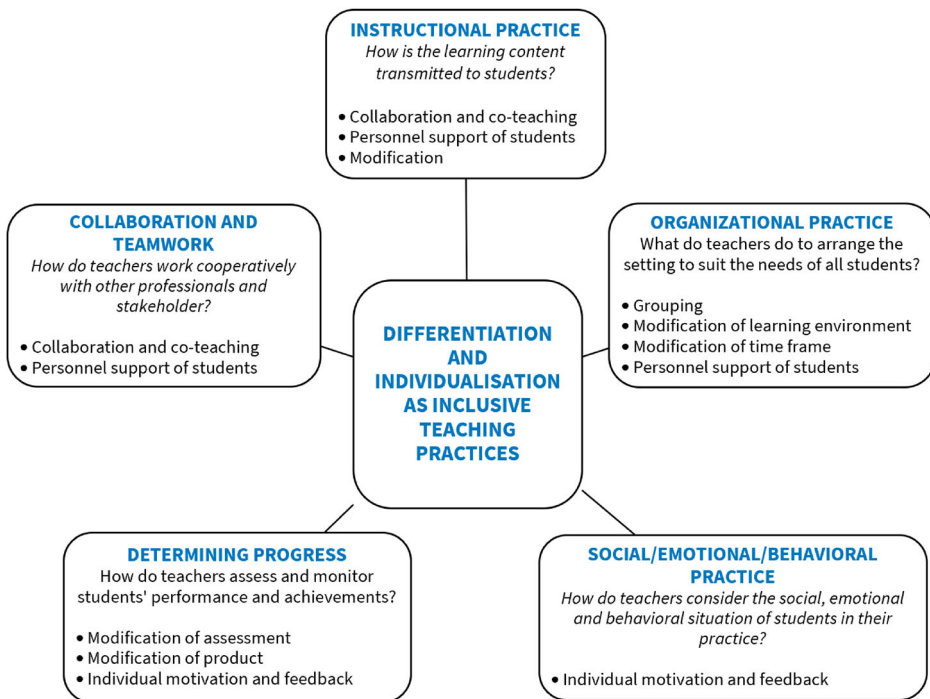
Considering the clarification of behavioural expectations and feedback on the behaviour of students, an example from the study of Florian and Spratt (2013) demonstrates the multifaceted nature of inclusion in educational contexts. By introducing a behaviour intervention for every student in the class, the teacher was able to manage the behaviour of one target student for whom this intervention was intended. Given the extension of what was originally applied for one student, an individualised approach was adapted in the sense of inclusion for every student.

### *Personnel support of students*

Unlike the category collaboration and teamwork, where the cooperation of different educational professionals and stakeholders was discussed, the theme personnel support of students deals with differentiated and individual support of students in the learning processes. This category intersects with the categories of collaboration and modification of the learning environment. The results of nine of the extracted studies showed that differentiated or individual support is used as a teaching strategy in inclusive classrooms in various ways as different approaches can be recorded (Nos. 2–7, 11, 12, 15). Firstly, the ratio of the number of supporting teachers to the number of pupils to be supported varies in the studies. Some authors report one-on-one support; others from one to group support. Furthermore, the support of several professionals for one class was reported (e.g. in the course of co-teaching by a class teacher and learning support assistants). The forms of support also differ in terms of the placement of support measures (inside the classroom or outside the classroom; see category modification of learning environment).

### *Differentiation and individualisation as inclusive teaching practices*

Given the research question refers to the five domains of inclusive teaching practices of Finkelstein, Sharma, and Furlonger (2019), the following figure (Figure 2) illustrates the implemented differentiated and individualised teaching approaches extracted from 17



**Figure 2.** Implementation of differentiation and individualisation.

selected studies. The linkage of reported characteristics of differentiation and individualisation and the domains of inclusive teaching practices show that the implemented approaches cover all five spheres of inclusive education.

## Discussion and conclusions

### *Implications for research and practice*

This systematic literature review sought to identify research focused on the implementation of differentiation and individualisation in inclusive education since the ratification of the UN Convention on the Rights of Persons with Disabilities in 2007. The findings outlined several approaches, which have been implemented in teaching practices in inclusive education. Eleven of seventeen studies used qualitative approaches to investigate differentiation and individualisation in inclusive education, whereas two investigated inclusive education using a mixed-method approach. In order to enable a multi-perspective approach and thus to illuminate the topic and perception of inclusive teaching practice in a holistic way, the mixed methods approach, which could ensure the consideration of different samples and diverse methods, could have been useful. However, one strength of the selected articles seems to be that approximately half of the studies include at least two different methods. Several different perspectives have been investigated within the 17 studies.

Most studies focused on teachers' perceptions or external observers' perspectives, but only two studies included the students' perceptions. This is especially interesting as



students are the receivers of inclusive teaching practices and could be treated as experts within this field of research, as they are exposed to the practices of their teachers on a daily basis (Bourke and Mentis 2013). A strength of several studies was that they combined teacher views with results from external observers or students. In general, teachers' answers might be biased e.g. because of self-serving-strategies (Kunter and Baumert 2006). A multi-perspectivist approach seems particularly enlightening against the background of recent research, which shows that there is only a small overlap of students' and teachers' perceptions of the implementation of differentiated and individualised inclusive practices (Lindner et al. 2019; Schwab, Sharma, and Hoffmann 2019).

Focusing on content-related outcomes, this study extended the previous work of Finckelstein, Sharma, and Furlonger (2019) using the results of their scoping review on the observation of inclusive teaching practice as a framework. Associated with (1) collaboration and teamwork and the (2) instructional practices, the findings demonstrate that pedagogical cooperation as well as specific didactic approaches are used as facilitators of individualisation and differentiation. However, in some of the articles analysed, difficulties in implementing these two domains of individualisation and differentiation were highlighted by teachers.

One of the major challenges in using inclusive teaching practice is the lack of resources. This is linked with the results of further research indicating that teachers often articulate the need for more trained staff in one class in order to implement differentiated and individualised instruction properly (Murawski and Lee Swanson 2001; Dixon et al. 2014). Within the analysis of the results, no major differences were found according to the geographical location of the inclusive setting.

Modification in the context of (2) instructional practices, (3) organisational practices and (5) determining progress was identified in several articles. Modification includes easy practices of differentiation (e.g. giving more time for an exercise or varying the quantity of exercises) or more complex preparation such as offering different assessment opportunities, adapting the instruction and material, or giving different options for products or modifying learning settings. However, these aspects are not only related to the competences of teachers and the available resources (personnel, spatial and material/physical resources), they also address the flexibility of curricula (Vadeboncoeur and Padilla-Petry 2017).

With regards to (3) organisational practices, grouping strategies were also implemented as a feature of inclusive teaching practices. Interestingly, a contradiction was identified within the grouping method itself. Again, the understanding and perceived definition of inclusion and inclusive teaching strategies can be seen as leading reason for a differentiated usage of this organisational practice. In some settings, groups of students were formed based on achievement and academic performance. That means, for example, that there were groups of students who were categorised as the good/talented students, groups of average students and groups of low performing students. Eligibility within a group was operationalised by the teacher through student performance. Other teachers formed student groups according to their interests. Students of different academic performance levels were in one group working on a task together. In this context, an examination of the understanding and definition of inclusive teaching and inclusion from the perspective of teachers and the goal of inclusion would be an interesting element to investigate. As already mentioned in the results section, different interpretations and expressions of

forms of differentiation were found e.g. regarding grouping. While on the one hand grouping was carried out as a didactic strategy within the classroom due to different grouping variables (e.g. interests, performance, goal oriented), on the other there is a spatial form of grouping, resulting in spatial separation of student groups. This result reflects a well-known discussion in the field of inclusive education: How broad is the concept of inclusion? Where are the limits of inclusion, when does it turn into integration and when should we rather call it exclusion?

Research in the field of inclusive teaching practice often deals with requirements and challenges for teachers on institutional, personal, professional or systematic levels. Teachers' or parents' attitudes towards inclusion, intervention studies to help teachers implement inclusive teaching practices, challenges in implementing inclusive educational or teachers' self-efficacy regarding inclusion are popular topics within the scientific discourse. This was also reflected in the article extraction. Only 17 of 388 selected articles were considered relevant regarding the active implementation of differentiation or individualisation. This shows that the focus of research is more on the framework conditions of inclusion and inclusive education than on the actual implementation. An accompanying disadvantage may be that the articles analysed are best practice examples and the settings examined were selected according to this criterion. What is really missing in research is a comprehensive insight in inclusive teaching that goes beyond the mere provision of manuals and textbooks on inclusive education. Considering the fact that there is a lot of theoretical knowledge on differentiated and individualised instruction, it is surprising that research does not go beyond the provision of inclusive teaching practice as didactic method and the evaluation of its implementation is missing.

Tracing the results back to the starting point in 2007, namely the first national ratifications of the UN Convention on the Rights of Persons with Disabilities (UN CRPD; United Nations 2007), interesting results could be found. By signing the UN CRPD, a national state declares that it has agreed upon the content of the treaty and is willing to work towards its implementation. With the ensuing ratification of the treaty a state signifies a legally binding obligation by the terms of the specific treaty. By comparing the year of signature, the year of ratification and the year of publication, the selected articles can be divided into three groups – (a) legally bound, (b) willing to implement, and (c) independent. (a) 11 of 17 articles provide insights into national educational settings in the sense of a continuous timeline (2–6, 8–10, 12–14). Chronologically, the Convention was both signed and ratified before the publication of the contribution which means that the implementation of inclusive education and inclusive teaching practices might be a result of the implementation of the treaty. (b) Five articles were published after the signature of the treaty, but before its ratification, which means that at the time of the conduct of the study the teachers whose teaching practices were evaluated were not yet legally obliged to ensure equality of opportunity in education for all students, regardless of their individual characteristics under the legal circumstances of the UN CRPD (1, 7, 15–17). (c) Only the article that provides insights into inclusive education in Botswana describes the perspective of a national education system which is totally independent of the UN CRPD as the state has neither signed nor ratified the treaty (11). The division of articles into the groups legally bound, willing to implement and independent and the number of articles in the respective categories, shows an expected image. The states that ratified the treaty needed to meet the treaty's requirement for entry into force, which means

that inclusive education as well as equality and equity in education had to be ensured beforehand in order to ratify the convention. In addition to the UN CRPD, the Sustainable Development Goals (United Nations 2015) contain a guide for ensuring equal opportunity in education for all students and highlight inclusive educational practice as main goal to be reached until 2030. That means that the signature and ratification of the UN Convention has not only increased awareness by educational stakeholders of the need to provide equal opportunity in education, but also of the need to identify ‘barriers limiting the presence, participation and achievement of learners’ (UNESCO 2017, 13) on a national level to emphasise the commitment to develop an inclusive educational system (Schwab 2020).

### *Limitations of the paper*

This systematic literature review could focus on only a small amount of literature on inclusive teaching practices in self-proclaimed inclusive education settings. Asserting that the educational setting was within the scope of inclusion by studies and authors is one of the major limitations within the narrative synthesis. The definition of terms and concepts could not be considered within the review. An analysis of the core concepts and an understanding of certain terms, such as inclusion and inclusive setting, is needed as ‘inclusion goes beyond the common understanding of inclusion as the shared classroom instruction of students with and without special educational needs in regular schools’ (Grosche 2015). To examine the underlying understandings, concepts and forms of operationalisation of inclusion and inclusive education, a systematic examination of the content and language of the selected contributions would be required as these terms seem to be used as fuzzy concepts in research (Schwab 2020). This would be a premise for determining the aims and goals of certain practices that are proclaimed to be inclusive teaching practices applied by teachers.

Aside from the fact that the underlying individual concepts of inclusive education within the articles could not be investigated, the geographical and social frame in which the studies and settings are placed would be interesting to investigate. How is it possible that teachers, students and external observers from all over the world experience differentiation and individualisation and the associated challenges for all stakeholders involved in a similar way regardless the conditions of the present educational system (e.g. resources, staff, teacher training)? Teachers from Europe report similar structures and challenges in implementing inclusive teaching practices as do teachers from Africa or Asia. However, this opens the question about the scope for teachers’ inclusive action in diverse educational settings and their link to the implementation of inclusive practices. Another major point is that it seems to be unclear what exactly distinguishes inclusive teaching practice from general good teaching practices.

Comparing the present results with those from the review of Darling-Hammond et al. (2020), the question arises as to what defines the inclusive element of educational practice. The boundaries between high-quality education and high-quality inclusive education seem to blur as the concept of inclusion within recent research is no longer limited to students with special educational needs. Therefore, the hypothesis arises that all the forms of differentiation and individualisation found through the analyses might also be implemented in regular classes that do not call their practices inclusive. Against this background, it would be interesting to examine differentiated and individualised practices in regular educational settings. Additionally, not all practices that are mentioned in the

results might be considered best practice for students' (learning) outcomes and development in the sense of inclusive education (e.g. separation of students with and without SEN into different rooms). Reacting to this limitation, future research should focus on effectiveness research to investigate direct and indirect effects of inclusive teaching practices and check whether these practices ensure inclusion and equity in education and have lasting effects on students' development.

## Conclusion

Several forms of inclusive teaching practice have been identified that can be traced back to differentiation and individualisation. However, implementing these practices requires a specific environment with adequate and flexible use of resources, flexibility in curricula, teacher competences and knowledge and an understanding of inclusive education as an opportunity for a beneficial educational for every student.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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