Conditions for academic learning for students receiving special education

Gunhild Nordvik Reite* and Peder Haug

Høgskulen i Volda, Norway

Abstract

This article discusses the research question *What are the conditions for academic learning for students receiving special education in years 5–10?* These have been examined by studying the surface structure and certain elements in the deeper structure of both special education and general education. The data consists of video observations of 8 individual students who have been granted special education. Through qualitative and quantitative analyses, we have found that the surface structures of both special education and general education are nearly identical. For the most part the instruction is teacher-controlled, the students receiving special education get more teacher support in special education than in general education and they cooperate to a very small degree with other students in both types of education. All in all, the students involved in special education appear to be offered the best conditions for learning in special education. Possible explanations and implications are discussed.

Keywords: *Didactic model; video observation; general and special education; signature pedagogy; classroom*

Introduction

§5–1 in The Education Act (1998) states that students who do not benefit from general teaching have the right to special education. The challenge is that students receiving special education do not have so positive learning outcomes in school (Knudsmoen, Løken, Nordahl, & Overland, 2011). There has therefore been considerable focus on the shortcomings of special education (Barneombudet, 2017; Haug, 2017b; Nordahl, 2018).

Almost 8% of students in primary school are entitled to special education. Just over 50% of them receive up to seven lessons or less per week (GSI-data from 2017/18); in other words, they spend the majority of their time in general education. § 5–1 in

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*Correspondence: Gunhild N. Reite, email: Gunhild.Nordvik.Reite@hivolda.no

The Education Act (1998) also emphasizes that the teaching content shall be such that "**the overall education programme** can give the student a proper learning outcome" (our translation and highlighting). Adapting general teaching to meet the various special needs has proved to be a challenge (Haug, 2003; Rønning, 2013).

The research question is: *What are the conditions for academic learning for students receiving special education in years 5–10?* One way of examining this is to look at the signature pedagogy of the teaching, what Shulman (2005, p. 52) calls "the characteristic forms of teaching and learning". This has three dimensions: surface structure, deep structure and implicit structure. The surface structure involves the operational acts of teaching and interaction between the actors, the deep structure concerns what one sees as good teaching method and practice, while the implicit structure is related to ethical and moral considerations (Shulman, 2005). In this article our main focus is the surface structure, but we also investigate elements in the deep structure.

Students receiving special education

As a group, students receiving special education have significantly poorer results than other students, for example relatively low motivation, weaker learning outcomes (Knudsmoen, Løken, Nordahl & Overland, 2011) and lower work effort and social competence (Hausstätter & Nordahl, 2009).

No clear answer exists regarding the benefits of special education (Haug, 2015), but it does not appear to live up to expectations (Barneombudet, 2017; Haug, 2017b; Nordahl, 2018). Special education seems to have a large potential for learning, without this being exploited to the full (Haug, 2015; Cook & Schirmer, 2003). For some students, special education would appear to be an obstacle to learning, while for others it leads to learning (Haug, 2017a; Hausstätter & Nordahl, 2009).

Special education and general education

A lack of educational benefit from the general education gives the student right to special education. The close link between these two types of teaching can be illustrated by the theory of complementarity, which states that the need for special education increases if the quality of general education is poor (Bachmann & Haug, 2006). Even so, a distinction has always been made historically between the special educational field and that of general education also in educational research (Haug, 2011).

Many studies of classroom practices have been carried out in general education, while research into special education has been fragmentary and mainly theoretical (Weiss, Kollmannsberger, Lerche, Oubaid & Kiel, 2014). The SPEED-project revealed large variations in special education; both its characteristics and quality appear to be dependent on the context and on individuals (Haug, 2017b).

Meta-studies have shown that general strategies in special education achieve the best results for the majority of students (Cook & Schirmer, 2003; Norwich & Lewis, 2007).

However, it can still be necessary to introduce specific approaches in the case of some students (Florian, 2008; Kavale & Mostert, 2004). Some measures have been documented to work well for students with learning difficulties, but are not always implemented in the way they were intended (Cook & Schirmer, 2003).

Special education is considered by teachers to be different from other teaching (Bele, 2012; Lavian, 2015). At the same time, it appears that what we call the surface structures of special education and general education are similar, even though adaptations are made (Haug, 2015; Kavale & Mostert, 2004; Norwich & Lewis, 2007).

Theoretical perspectives

When studying conditions for academic learning, theoretical perspectives regarding what constitutes learning, how it takes place and can be facilitated will be crucial.

Learning processes as the construction of knowledge

The concept of constructivism is not unambiguous (Harlow, Cummings & Aberasturi, 2006), but refers often to a basic assumption that the individual takes part in constructing his or her own knowledge (Schunk, 2014).

In cognitive development theory, Piaget (1983) claims that learning processes take place actively in the individual through acquiring and reorganizing cognitive structures, schemas. Teachers shall facilitate situations in which the student actively can learn both in practice and through social interaction. Their teaching can make knowledge meaningful for the students by developing the mental building blocks the students already possess (Ertmer & Newby, 2013; Roehler & Cantlon, 1997). In a constructivist perspective, teachers should teach the students to construct meaning and become consciously involved in learning processes. Self-regulatory skills can be developed through explicit teaching and through observing competent social models (Bråten, 2002). Some constructivist theories are mostly concerned with the individual, others emphasize acquiring knowledge as part of a culture and a social group. Recent constructivist theory recognizes both the individual's own activity and learning's social aspects (Hadwin & Oshige, 2011).

Learning processes in interaction with others

A key concept for the theoretician Vygotsky is the "zone of proximal development", the difference between what a child can accomplish alone and what he or she achieves when guided by someone who is more competent (Schunk, 2014). The idea has inspired the term "scaffolding" (Wood, Bruner & Ross, 1976), which refers to the help other more competent actors can offer the child. Learning can also take place through "peripheral participation", where the child progresses from observation to full participation (Dennen & Burner, 2008).

Social-cognitive theory (Bandura, 1989) is concerned with the child's interaction with its surroundings. Bandura (1977) believed that, for instance, modelling is a more effective way of learning than trial and error. According to Jonassen (1999) cognitive processes can also be modelled. Students can benefit from instructing each other (Hattie, 2009). Modelling can also take place in teacher-guided class discussions (Hogan & Pressley, 1997).

Opheim, Grøgaard and Næss (2010) found that teacher-guided instruction with clear leadership and instructions, individual work under supervision and academic discussions between teacher and student were the methods that correlated most closely with positive student achievement. Student-active forms of teaching such as cooperation between students, project work and practical work appeared to give poorer results. Haug (2012) found that especially students who are struggling with motivation and learning benefit less from such methods. What type of teaching is best will, nevertheless, depend on the way it is put into practice (Haug, 2011).
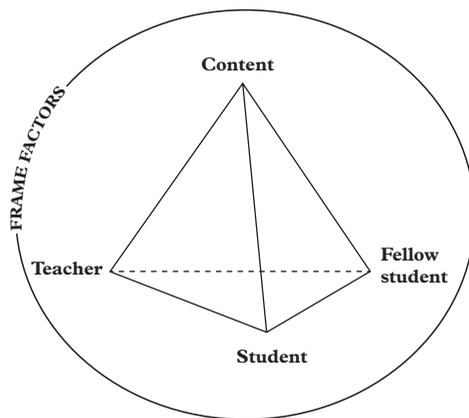

Figure 1. A didactic pyramid.

A model of a didactic pyramid can illustrate interactions in the classroom. It is an illustration of an overarching understanding of learning processes, and is based on the belief that learning takes place both individually and in interaction with others.

Its point of departure is the didactic triangle (Zierer & Seel, 2012). The triangle has three axes, each axis representing different degrees of tension in the relations between the vertices student, content and teacher.

The didactic triangle does not illustrate the interaction between the students. In order for the model to incorporate the understanding of learning processes that are also social, we expand the triangle by adding a fourth vertex, or dimension, fellow student, to form what we call a didactic pyramid. This model has some similarities with a model presented by Michelet (2008).

We then have three new axes: student – fellow student, fellow student – content and fellow student – teacher. The axis student – fellow student is basically symmetric; the students have the same role at school. At the same time the students' aptitudes and skills are different.

We also place a circle around the pyramid. This illustrates that the scope of action is expanded or restricted by the frame factors.

It is primarily the axis between content and student that illustrates the meeting with the academic subject. The student is also exposed to the subject through interaction with and observation of the teacher and fellow students, as well as through his or her own activity and cognitive processes. All the axes will in fact be involved in subject learning.

Method

The data is taken from a multi-case study. By examining a number of cases, it is possible to a greater degree to establish a robust basis for constructing theories and making possible generalisations (Eisenhardt & Graebner, 2007).

Unlike academic learning, conditions for learning can be directly observed. The article is therefore based on video observations of eight individual students (also referred to as "focus students"). In total, these students were filmed during 24 lessons of special education and 26 lessons of general education, involving 22 different teachers. There were roughly the same number of lessons per focus student and roughly the same amount of special education and general education for each of them.

The focus students attended years 5–10, and each of them had been assigned to special education due to moderate learning difficulties and/or behavioural problems. This means that the informants do not comprise a group that is too heterogeneous. At the same time, a range of frequent learning difficulties are represented (writing, reading, mathematical and unspecified attention difficulties, ADD/ADHD and Tourettes syndrome). This mirrors the fact that the group of students with moderate difficulties is diverse. There are 2 girls and 6 boys spread equally across years 5–7 and years 8–10. Six of them have between three and seven lessons of special education per week, two have roughly ten lessons. Qualified teachers were responsible for all the teaching, in the special education, 12 out of 26 lessons were conducted by teachers with additional formal special educational training.

Recruiting informants, especially teachers, was difficult. All the students and teachers in the classroom, as well as the students' parents or guardians, had to actively consent to taking part in the study. Extensive recruiting was attempted for 18 months via school leaders, teacher conferences and in social media. The first data collection was made in March 2016 and the last in January 2018. The question arises as to whether there is a particular "type" of teachers and students that have participated. We experienced variations both in the motivation to participate and in the characteristics of the informants, so in our opinion a certain degree of heterogeneity has nevertheless been achieved.

We transcribed all the videos in NVivo 11 Pro. The transcriptions describe what the focus students do and say, what their fellow students or teachers do and say in their interaction with the focus student, and what the teachers and other students do and say in plenary sessions. To make it possible to quantify the material, the transcriptions were divided into 15-second sequences.

In the initial, open coding process, the didactic pyramid (see figure 1) was used as an organising tool. Based on the data we developed overarching categories that we understood to be elements in the surface structure of the teaching. Further coding was done within the framework of these categories, limited to what was identified as academic actions. In other words, the process was carried out hermeneutically. The analysis was abductive and iterative in the interplay between data and theoretical models and with repeated coding. This has resulted in a detailed insight into the data. Being so involved with the data and the process of repeatedly switching between data and own interpretations improves the reliability (Roberts, Priest & Traynor, 2006).

To guarantee consistent coding, all transcriptions were looked at with the same framework, an approach recommended among others by Rapley (2011). As the process moved forward, some of the categories were amalgamated to reduce the complexity. We are left with 20 appropriate categories (see table 1). Some of the categories describe the surface structure, others are about elements of the deep structure.

We then saw the need for a quantitative analysis of the qualitative coding, to provide an overall picture, a form of mixed-method approach. Greene, Caracelli and Graham (1989) have identified different categories of reasons for such an approach. One of these is called "complementarity", looking to achieve "elaboration, enhancement, illustration, clarification of the results from one method with the results from another". When studying conditions for learning, the quantity of the categories will be extremely relevant.

Data from all the teaching sessions for all the students have been combined. No attention has been paid to variations in for instance gender, age, type of difficulty and amount of special education, over and above the choices already made when selecting informants. Neither is any distinction between school subjects made. This means that certain nuances are lost, but provides data that is robust enough to be able to present an overall picture. This approach also helps to preserve the anonymity of the informants.

Findings

The findings are presented in the table below, using the overarching categories as headlines. These are aspects of the signature pedagogy which also represent central features of the axes in the didactic pyramid. These are: organization, teaching materials, work methods the focus student is involved in, what the teacher does in regard of the focus student (individually and in plenary sessions), what the focus student does, academic interactions between the focus students and fellow students and observation of fellow students. Some of the categories are illustrated with excerpts from the

transcriptions to provide examples of the phenomena the category describes. All the names are fictional and only boys' names have been used to avoid identification.

When coding we found that on average the focus students are academically active (in the sense of practising or being exposed to a subject and apparently paying attention) 86% of the time they are being filmed, both in special education and in general teaching. However, there are major differences in the material, ranging from 25% to 96%. There are also considerable differences in the data when it comes to the scope and distribution of the categories. This applies to both special education and general education.

We have calculated in how large a percentage of the coded intervals with academic activity each category is observed, split into the two types of education. This is in total 7028 15-second intervals (3213 in special education and 3815 in general education). The categories are not mutually exclusive, meaning the sum total is not 100 percent. The calculations are shown in the table below and presented further in the text following the table. When pairs of numbers are presented in parenthesis in the text, the first refers to special education, the latter to general education.

In addition, we have calculated how large a percentage of the teaching sessions a category is observed. These numbers will not be shown in the table, but presented in the text following the table whenever we consider them to provide necessary additional information.

The categories organization and materials are presented only in the text.

Table 1. Results of the quantitative analysis of the observation data.

	Scope (average time spent)% of total number of 15 second intervals.	
	Special education	General education
	N = 3213	N = 3815
What work method is the focus student involved in ?		
Student cooperation	7*	11
Individual work without teacher support	14	15
Work with direct teacher support	40	9
Active in/listening to class discussion	39*	45
Listening to teacher monologue	1	13
Automatising exercises	6	0
What is the teacher doing in relation to the focus student?		
Modelling	7	3
Visualizing/concretizing	12	5
Talking about metaperspective/work process	7	8
Inviting elaboration, reasoning, reflection	4	3
Linking teaching material to something familiar	10	8
Referring to other teaching	5	3

(*Continued*)

(*Continued*)

	Scope (average time spent)% of total number of 15 second intervals.	
	Special education	General education
	N = 3213	N = 3815
What is the focus student doing?		
Verbally active in an academic context	52	18
Showing initiative	17	8
Talking about aims, strategy, own work process	5	2
Reasoning, verbal reflection	4	1
Academic interaction between focus student and fellow student		
Discussing academic topic	0,4*	4
Focus student's observation of fellow student		
Observing fellow student's reasoning/ reflection	1*	4
*One-on-one teaching excluded, N = 2133		

Organization

All general education sessions are in principle in full class, while special education sessions are basically either in a small group (63%), individual teaching sessions (29%) and in full class (8%) (not shown in table).

What work method is the focus student involved in?

Class discussion (teacher and full class in general education or teacher and two or more students in special education) is a work method that distinguishes itself as being in widespread use in both forms of education (39% and 45%). These discussions are mostly teacher initiated and teacher led. The category working with direct support of teacher also distinguishes itself. This is widespread in special education, but is rare in general education(40% vs 9%). Monologue from the teacher is not common, and virtually absent from special education (1% vs 13%).

The focus students spend little time working alone without teacher support. There is little organized student cooperation, usually in the form of cooperation between permanent so-called learning partners in general education. Working on automatizing exercises (for example, explicit "drilling" of multiplication tables and spelling) occurs only in special education, but not much (6%).

What is the teacher doing in relation to the focus student?

The extent of the majority of the categories is roughly the same or a little larger in special education than in general education. At the same time, with one exception, all the categories are registered in a larger percentage of sessions in special education than in general teaching (not shown in table).

The teachers visualize and concretize (12% vs 5%) and model (7% vs 3%) more in special education than in general education. The same goes for references made to other teaching (5% vs 3%), mainly teachers linking the content of special education to that of general teaching. Such references are made in almost all special education lessons, but less frequently in the general lessons (not shown in table).

The teachers also invite the students to elaborate, reason and reflect in fairly many lessons (79% and 73%, not shown in table). This can happen, for instance, by expanding the students' thinking by asking for a reason or an example. The scope of the category (time spent) is nevertheless very low (4% and 3%) Here the point should be made that it is the (brief) invitation itself that has been coded.

Below the teacher (T) asks about diagrams in a special education with Kristian and fellow students (S):

> T: and ... what sort of diagram can you make then, based on this information? A bar chart or a line chart?
> S: I guess it's a bar chart?
> T: That's right, yes, but why? if you are going to make one from the first three here, then?
> K: Because it's better.
> T: Yes, but why?
> K: Because there are more, not just one!

The teacher challenges Kristian's thinking by not considering a correct answer to be satisfactory.

Inviting students to elaborate, reason and reflect is slightly more common in special education than in general education.

Almost as much time is devoted to the teacher's discussion involving the focus students of meta-perspectives on teaching in both types of education (7% and 8%). It takes place in most special education lessons, fewer of the general (92% vs 42%, not shown in table). Here the teacher asks Simon in special education about how he thought when he was doing sums in mathematics:

> T: What sort of strategy did you just use to work this out?
> S: I worked it out backwards.
> T: Oh yes! (…) You almost imagined …(…) in your mind's eye what it was supposed to look like?
> S: Yes.

Such meta-perspectives can be aims, strategies and thoughts related to the work process.

Sometimes the teachers refer to other teaching; in special education it happens in almost all sessions. Here the teacher has practiced sentences with Jonas in special education:

> T: Now we have practiced a lot on these, the two of us. Do you think that if you … (…) if Silje *(English teacher)* says on Friday that they are going to write some sentences … using I like or I can't , will you remember how to do it?
> J: Hm-hm
> T: Now you have practiced some words that you can write too.

We see a number of examples of this sort of preparation for general education.

What is the focus student doing?

All the categories are more frequent in special education than in general education. There the focus students are often active verbally, show some initiative academically (like raising their hands, making academic comments). They verbalize meta-perspectives in relation to the learning processes (for instance how they are to proceed) much more often than in general teaching, the total amount is still modest (5% vs 2%). Here Simon is practising sentences in general education English:

> S: "There's no sound like it"
> S2: Can you read that to yourself, Simon?
> S: Wait a minute, I just have to read "No thanks, I have nice knees but I prefer trousers." That's what I must practice.

Simon has found out which sentences he needs to practice and has taken the initiative to do so.

The focus students reflect and reason mostly in special education, still to a very small extent (4% vs 1%). However, it occurs in quite a number of the special education lessons, in fewer of the general (83% vs 27%, not shown in table). Runar is here discussing with the teacher in the social science special education:

> T: And what sort of life did the king live? (…)
> R: Luxury?
> T: A life of luxury, yes?
> R: Lots of food, fine clothes..yes (…) And was VERY selfish, to put it quite frankly.

Runar uses his knowledge to reflect and arrive at a conclusion.

Verbal academic interaction with other students

The focus students very rarely discuss academic topics with other students; in special education this is virtually non-existent (0,4% vs 4%). Other remarks related to school subjects are usually of a practical nature.

Below we see Fredrik and a fellow student discussing something in mathematics in general education. They are supposed to work together to calculate unknown angles:

> S: And then a hundred and forty-five, is it.
> F: Hang on ... (…) We've made a mistake! How can it be ninety if it isn't …. like this?

(Fredrik points to the page in the book).
S: But then it's three hundred and sixty minus ninety.
F: Yes, but look at the degrees, it's an obtuse angle!
S: Look, three hundred and sixty minus ..(…) It's not possible.
F: Let's do it again.

Here we see that Fredrik reasons academically, observes his fellow student and comments on their work process.

Observation of other students

The focus students observe to a very little degree other students reason or reflect (1% and 4%). Here from a class discussion in a general natural science lesson where Daniel is observing. A fellow student asks the teacher in class:

S: If wind…wind is particles in motion, what makes the particles move? (…)
T: So what is it that sets the particles in motion so that we get…eh wind?
   The teacher looks out across the class.
S: Temperature.
T: Yes! (…) It's differences in temperature, isn't it? Some particles move a lot, some not very much. (…) And THAT creates wind.
S: But temperature is caused by the particles moving (…) So that's not an answer as to HOW the particles are set in motion?

Here Daniel can experience academic curiosity by observing his fellow students.

Teaching materials

In special education, the use of teaching materials seems to be more varied than in general classes. Textbooks are much more widely used in general teaching (over 80%, in special education 24%, not shown in table), while the use of digital material is somewhat greater in special education than in general teaching. The differences are not large and have not been calculated or presented in more detail.

Summary of the findings

We focus on three key findings:

Key features of the signature pedagogy

On average the focus students receive often comprehensive direct support from teachers in special education, much less in general education. Class discussions are the main work method in both forms of teaching. The teachers take control of the teaching while attempting to stimulate the students cognitively. They link topics to familiar phenomena and invite students to elaborate, reflect and expand, in particular in special education.

The teachers organize very little student cooperation, and the focus students interact quite rarely and very little with other students, especially in special education

(sessions with one-on-one teaching are not included in the basis for the calculations in these categories). The focus students are active in special education, but in both types of teaching they verbalize very little academic reflection, reasoning and analysis of their own work process.

Special education is not so special

In general we find the same categories in the two types of education, the same elements and the same features in both teacher and student behaviour. We see two exceptions:

> automatization exercises are only part of special education, and the organization is different. The elements and features of both the surface structure and the elements of deep structure are almost identical, but show partly different frequency and scope in the two types of education.

Best conditions for learning in special education

Special education in the data varies in comparison with general teaching in its scope in several categories. Some describe the surface structure, others say something about the deep structure. The focus students take part in and are exposed more frequently and to a higher degree of activity in special education that can be considered to improve the conditions for learning, seen in relation to the theoretical perspectives in this study.

Discussion

Features of the signature pedagogy

Both Haug (2011) and Klette (2003) have registered a more detached teacher role in the classroom and increased focus on student activity. This is not apparent in our material. On average, the teaching is teacher-controlled in both types of education, and the teachers make efforts to stimulate students cognitively, in particular through class discussions. In special education, the teachers offer comprehensive direct support, much less in general classes. Based on our theoretical point of departure, this type of teacher role can support the student's development.

The focus students appear to be quite active and to take the initiative verbally, at least in special education lessons. Even so, we find very little evidence of them verbally reflecting and reasoning in relation to the subject material and their own learning, especially in general education. This does not necessarily mean that the students are not doing so cognitively. However, it *may* well mean that the students are participating in the teaching on a rather superficial level.

We observe very little organized student activity in which the focus students themselves control the learning process. There is not necessarily any contradiction between limited student endeavour and the degree of student adaptation. The more

teacher-controlled approach may work best especially for students who are struggling academically. This presupposes adaptation in the collective teaching (Haug, 2011). In our material, the teacher attempts to stimulate student activity through class discussions.

Only to a very small degree do the teachers implement academic cooperation between students; in special education it is virtually non-existent, even when opportunities exist. This suggests that the teachers base the teaching primarily on an acquisition metaphor for learning and less on learning also as a social activity, as Bandura (1989) points out. Also in general education, there is very little academic discussion between the focus students and other students. Nor do they observe very much academic cooperation; this takes place for the most part in general education. The lack of this experience *may* mean that the students miss out on sources of learning. At the same time, research shows that it is challenging to achieve good academic benefits from this sort of cooperation, and that teachers only to varying degrees master this type of teaching method (Opheim et al., 2010). Hence, it is unclear how much the students in special education actually "miss out on" when this form of teaching is missing.

Special education is not so special

For the focus students there is little difference in the surface structure and elements of the deep structure in the two types of teaching; the data have produced almost identical categories. That means that the interactions in the axes of the didactic pyramid differs very little. Similar findings have been reported from earlier research (Festøy & Haug, 2017; Norwich & Lewis, 2007). The exception is the organization, the use of slightly different teaching material, and the fact that in special education there is some focus on automatization exercises. It is possible that this latter practice is an example of activities that are specially adapted to the learning difficulties of the students, which Florian (2008) and Kavale & Mostert (2004) state may be necessary.

Beyond this, we do not observe special work methods or interactions in special education. One way of interpreting this is that use is not made of specific approaches that might benefit these students. Another is that general strategies actually are best for them, as research seems to indicate is the case for the majority. It can appear that belief in the function of what is special is not dominant. According to Haug (2015), schools being less concerned with mastering specific learning difficulties can be linked to the increased focus on inclusion.

Best conditions for learning in special education

Special education distinguishes itself from general education in the scope of several categories. In special education the focus student participates in and is exposed to more activity which can be considered to improve the conditions for learning, seen

in relation to the theoretical perspectives on which this study is based. These students seem to be given more opportunities for activities supporting individual knowledge construction (Piaget, 1983) as well as interaction with others (Bandura, 1989; Schunk, 2014), in this case particularly with the teacher.

When the aspects of the signature pedagogy are so similar, and yet special education still has the best conditions, one possible explanation is that the student – teacher ratio is much lower in special education than in general education. This allows the teachers to pay more attention to each child and gives a greater opportunity for the student to be active. Comprehensive research has true enough not been able to find unequivocal links between class size and student achievement (Falch, Sandsør & Strøm, 2017). At the same time, studies have shown increased learning outcomes from teaching in small student groups (Elbaum, Vaughn, Hughes & Moody, 1999; Vaughn et al., 2003).

Research has found that students in special education do not have such positive learning outcomes in school. There has therefore been considerable focus on the shortcomings of special education and special education system (for instance Nordahl, 2018; Barneombudet, 2017 (The Ombudsman for Children)). Although the claim has been made that recent educational reforms could have led to an increased need for special education (Mathisen & Vedøy, 2012), there has been less focus on the effects of general education and its content and structures. Norwegian research has traditionally been mostly concerned with the individual-pathological perspective on learning difficulties (Haug, 2003). It would appear that the same can be said of PPT's (educational and counselling service's) work involving expert assessments (Tveitnes, 2018). The lack of other perspectives can mean that the significance of other factors than the student him/herself and special education have been underestimated. Research indicates that special education have the greatest potential for learning. Therefore it is relevant to question whether the negative focus on special education itself is justified.

It is difficult to measure the benefits of special education alone (Bachmann & Haug, 2006). Poor learning outcomes may have to do with shortcomings in special education. However, other factors include the conditions special education is given, what general education offers special needs students, the lack of a holistic perspective and other overarching features in the school (Haug, 2017b). Special education cannot bear the responsibility alone.

The study's limitations

The data is limited and it has been difficult to find informants. This may have led us to recruit a certain "type" of informants. In our experience, the sample selection of informants is varied, but we cannot be certain that the data is representative, which in turn means that it is not possible to generalise.

Learning conditions for students with very comprehensive learning difficulties have not been examined, nor special education carried out by assistants. In our material a

larger number of the teachers performing special education have formal special educational training than what would appear to be the case in Norwegian schools. Much of this education has been carried out by staff without such training (Nordahl, 2018). The conditions for academic learning may be poorer when unqualified staff have the pedagogical responsibility (Webster & Blatchford, 2013). At the same time, there is reason to believe that the conditions could have been even better, if more teachers with special education training were responsible for special education (Haug, 2014; Kurth & Keegan, 2014). Our data is not representative, but shows the potential that special education may possess.

We have not carried out a more detailed qualitative assessment of what has been coded. However, our impression is that this material does not provide any basis for claiming that the qualitative variations are different in the two types of education.

Non-academic factors and dimensions are also important for the students' learning and development. It has not been the ambition of the article to describe these. We cannot therefore say to what extent special education provides the best conditions for positive development in respect of *all* dimensions.

Conclusion

The article has investigated the conditions for academic learning in the classroom for students in special education in years 5 to 10. This has been done by studying the surface structure and elements of the deep structure in special education and general education with a focus on specific students receiving special education. We have found that these are almost identical in both types of education. They are characterized by a clear and articulate teacher who is in control of the teaching, of much direct support in special education and a widespread use of (mostly teacher initiated and teacher led) class discussions with student activation in both types of education. The focus students are particularly active in special education, but do in both types of teaching to a very small degree reflect and reason academically, also in relation to their own work process. They hardly ever discuss academic topics with fellow students.

Although the signature pedagogy and therefore the interactions in the didactic pyramid are similar, in special education the focus students take part in and are more exposed to activities that can be considered to improve the conditions for learning. This means that the students granted special education appear to enjoy the best conditions for academic learning in special education, a conclusion also reached by others.

Research has indicated that special education has a clear potential for improvement. Nevertheless, in our opinion, this is not the most important factor that must be investigated and improved when students with special education do not have satisfactory learning outcomes. Future research ought perhaps to place an even greater focus on the frame terms that special education is granted, on what conditions this category of learners are offered in general education, whether the overall education

is characterized by a holistic approach and by the necessary quality, and how we can bring about a school that offers greater room for diversity.

Author biography

Gunhild Nordvik Reite is a Doctoral Research Fellow in Special Pedagogy at Volda University College. She has a master's degree from Volda and was a teacher and special education teacher in primary school for 20 years. She has worked at the Institute of Pedagogy at Volda University College since 2014 and been a member of the research group associated with the SPEED research project.

Peder Haug is Professor in Pedagogy at the Institute of Pedagogy at Volda University College. He has a master's degree from the University of Oslo and a doctorate in pedagogy from Stockholm University. He has worked at Volda University College since 1976, but also been involved with other institutions in Norway and Sweden for longer periods of time. He has published a number of books and articles related to kindergarten, school, teacher education and special education and has led several educational research projects.

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