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SEN and the art of teaching
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7.1 Introduction

The main issue this thesis concerns the assumption that teachers should focus more on academic instruction as a way to handle or even prevent students' problem behaviour in their classrooms. With this research we hope to fill the gap in the literature concerning the implications of academic instruction on the occurrence of problem behaviour in special education classes for students with severe emotional and/or behavioural problems. This chapter briefly summarizes the most important findings of this thesis, then answers the main research question, namely whether offering academic instruction to students positively affects their behaviour and their academic outcomes. The latter will be reflected on critically alongside the significance of these results for special education. Recommendations regarding systematic academic instruction in special education and an advice for further research on this subject will end the chapter.

7.2 Study findings

Our research started with a review study focusing on the effects of academic instruction on students with emotional and behavioural disorders (EBD). We mainly wanted to assess through this review all recent research evidence concerning the value of academic instruction on the behaviour of EBD students. The findings reveal that even a single intervention in the academic curriculum or instruction can affect problem behaviour in classrooms (Lee et al., 1999; Haydon et al, 2010), and especially that academic instruction positively affects the learning experience of EBD students (Tyler-Wood, Cereijo & Pemberton, 2004). However, there were hardly any strong findings with regard to the overall and long-term effects of academic interventions on the behaviour of students. Even more noteworthy perhaps was the conclusion that it was unclear to what extent the approaches described could be performed in special education classes. For example, the important role that research assistants played in the implementation of interventions can hardly be reproduced in daily special education practice. This makes it hard to implement the researched practices with sufficient treatment integrity (Lane et al., 2007). The limited feasibility also concerns the number of participants in the single subject studies reviewed, often a fraction of the number of students who attend special education classes. Finally, the reviewed studies were not clear to what extent the interventions actually met the students' special needs. Of course, pre- and post-tests concerning the behavioural and academic outcomes were performed, but no study explained why specific interventions
were chosen for specific students. Since it is crucial that the interventions suit the students’ needs and capabilities, academic interventions should be checked continuously for their aptness, and, if necessary, adjusted. Therefore, although we started the study with a focus on academic instruction as a counterbalance to behavioural instruction, systematic instruction was considered a second and much-needed element to be addressed. We therefore decided to include the plan-do-check-act cycle in our research, an ongoing four-step model for adapting instruction to students’ needs (Deming, 1986). These two dimensions of teaching academic and systematic instruction, termed together as systematic academic instruction – became the basis of our research.

Based on these two dimensions, we developed a coordinate system describing four types of teachers according to the amount of systematic academic instruction they performed (chapter 3). The teachers in the top right of the coordinate system scored high on both dimensions and were understood to meet the requirements of both dimensions best. These teachers focused more on academic instruction than on redirecting behaviour and in a systematic manner. We hypothesized that if we could differentiate these teachers from the other teachers in the coordinate system, we would have a way to test our theory that the teachers in the top right of the coordinate system would encounter the fewest behavioural problems in their classes and achieve the best academic results. Accordingly, based on the coordinate system, two questionnaires were developed and evaluated. The results suggested that both questionnaires were sufficiently valid and reliable and enabled us to position teachers in the matrix in both dimensions.

Next, as described in chapter 4, our theory was tested by correlating the amount of systematic academic instruction conducted by teachers in special education to the behaviour and academic skills of a sample of their students. A major finding of this study was that most teachers did indeed provide their students with academic instruction based on a systematic approach. However, no relationship was found between the amount of systematic academic instruction the teachers performed on the one hand, and academic performance and the amount of student problem behaviour experienced on the other. Therefore, while our review study showed that this relationship exists at a case level, it did not appear to be borne out on a group level. There may conceivably be some inherent complicating factors and as yet not understood in our theory, as well as important conditions for successful systematic academic instruction which may not adequately be met in special education. Further study of both dimensions appears necessary. Based on observations, it is questionable whether a high score on the academic instruction provided
by teachers automatically means an equally high score for the academic instruction received by their students. Since a large amount of instruction is provided to students individually, the time spent on one student simply cannot be spent on other students. Concerning the academic outcomes of the students, the scores on the CITO (Central Institute for Test Development) assessments, showed remarkable and improbable progressions or regressions in scores (comparable to progress or regression of one to several years in a 6-month period). Both these findings were the basis for further research.

As stated before, the academic instruction dimension focuses on the amount of academic instruction teachers provide to their students. However, as teachers have to divide their attention across several students, the amount of instruction provided can differ from the amount of instruction actually received by each of their students. The study results described in chapter 5 confirm this assumption. The observations reveal a difference between the instruction provided by teachers and the instruction received by each of their students. Moreover, the findings also reveal that a lot of academic instruction is provided by teachers to rather large groups of students simultaneously. This is an important observation because, given the diversity among students in special education, it seems unlikely that all the students are well served with such broad group instruction (Baker et al., 2008). Interviews with observers supported this assumption. Throughout their observations, they noted numerous students showing distracted behaviour during group instruction. Clearly, most students did not seem to get the individual attention they need from their teachers, while individual instruction seems essential for these students to stay on track. These observations confirm the findings of chapter 2 concerning seatwork, asserting that during this stage of the instruction process, students need support to work individually. The impact of these findings can probably best be explained by the long understood theory of learning by Carroll (1963). Based on Carroll’s theory, the concept of learning can be described as time actually spent in learning divided by time needed for learning (School Learning = time spent/time needed). Time spent is the result of time allocated for learning by classroom teachers multiplied by the students’ involvement with academic content during that allocated time (the percentage of the allocated time that students are actually involved in the learning process = engagement rate). Converted to the coordinate system, it shows that teachers can spend most of their instruction time on academic instruction (allocated time is sufficient), but also that they cannot give students the individual attention they need to stay involved (engagement rate
is not maintained, which leads to disengagement). Clearly, this affects the academic growth of these students and hence the results in Chapter 4.

Concerning the systematic instruction dimension, we decided to focus on one of the key aspects of a systematic approach, namely the use of assessments (Chapter 6). The outcomes of assessments used in chapter 4 to measure the academic growth of students gave rise to questions about the use of biannual standardized assessments to measure the academic growth of students in special education. The findings of chapter 6 show that the predicted value of the assessments in special education is similar to that of the norm group of students in mainstream education. The academic outcomes obtained in chapter 4 seem reliable in that respect. However, the results of chapter 6 also show that the levels at which the tests are offered are questionable. Since teachers merely offer their students the next test in line, regardless of the outcomes of the foregoing tests, it remains unclear whether the tests actually fit the students’ performance levels. These findings challenge the assessment outcomes. Furthermore, teachers use scales or performance levels to measure academic growth in daily practice. These are clearly much less precise (Tindal et al., 2016) and provide teachers with hardly any information concerning students’ actual educational needs.

Taken together, the findings of the five studies reveal that teachers actually provide their students with academic instruction. Therefore, the assumption that teachers offer their students primarily behavioural instruction at the cost of academic instruction (Wehby et al., 2003; Van der Wolf & Van Beukering, 2009; Hagaman, 2012) seems outdated. The insufficient academic growth of EBD students can no longer be explained by the fact that too much time is spent on the students’ behaviour. Nevertheless, the study findings also reveal that there are some serious concerns about the academic instruction provided in special education classes. A major concern is the teachers’ ability to provide students with the specific instruction they actually need. The students in special education originate from different backgrounds and all were referred to special education because mainstream education could not sufficiently meet their specific and individual educational needs. All these students, often diagnosed with severe behavioural disorders and showing an array of diverse problematic behaviours, are brought together in the same class. After referral, teachers in special education are expected to meet the variety of special needs of all these referred students. These teachers have to continuously adapt their academic instruction to the specific needs of all of their students. However, to avoid escalations in problem behaviour, all the teachers’ attention will sometimes only be on one or two
students in a class. This reveals a weak point to offering systematic, and thus tailored, academic instruction to students in the classrooms in special education, namely the challenge of providing all individual students with tailored instruction based on their unique needs in a single lesson by one teacher. Given the diversity of the students and the size of their classes, this seems to be a nearly impossible task for teachers. Accordingly, in terms of the coordinate system, although teachers mostly score in the upper right corner of the coordinate system, it would appear difficult to put this into practice in their classes on a daily basis. Hence, the academic results of EBD students in special education classes remain poor.

7.3 Implications

In view of the above, the very reason why students were referred to special education in the first place, namely that they could not obtain the individual attention they needed from their teachers (Pijl, 2016), seems also valid in special education. Student at risk require increased learning and instruction time, preferably individually (Steenbeek et al., 2012). This demands a classroom organization in which the remainder of the students are able to manage their own learning processes in order to stay on track during individual seatwork (Van de Grift, 2007). In a class of only EBD students, the latter is very difficult if not impossible to realize. This raised the question of whether special education is always the best option for teaching EBD students. In a small explorative study (data not shown) we compared the amount of instruction EBD students receive in special education with the amount of instruction EBD students receive in mainstream education. The findings suggested that that if there is only one student with EBD in a mainstream class, he or she generally receives more individual instruction than students generally receive in a special education class (Luchies, 2016). However, if more SEN students are in a mainstream class, this difference disappears.

Therefore, if we want to live up to the promises of the Salamanca Statement, special education for EBD students must optimize the practice of systematic academic instruction, adapting it to the special needs of each student. This is not new to the field of education, yet it cannot be stressed enough. Back in the 1960s, Vygotsky (1962) specified the significance of individualized support from the learning environment. Vygotsky described the need for teachers to provide their instruction in the zone of proximal development (ZPD). In his opinion, to provide students with optimal instruction teachers
should guide their students past their actual level of development into the level of potential development. It is not a coincidence that the roots of Vygotsky's theory are in special education. He stated that special education should not just be a diminished version of general education, but a specially designed setting in which the entire staff serves the individual needs of students with a disability (Gindis, 1999). Intensive guidance is essential for students in special education to overcome the difficulties they experience in performing challenging tasks. Consequently, if teachers do not have the time to guide every student into their zone of proximal development, these students will not receive the instruction that is due to them.

The findings of the five studies and the related general conclusions have serious implications for teachers, administrators and policymakers. Teachers apparently know how to handle their students: they approach their students systematically and they provide them with academic instruction. In other words, there is no longer any knowledge deficiency concerning the handling of EBD students. The effective implementation of this knowledge for every student individually, however, continues to fall short of requirements. Consequently, an executive deficiency concerning systematic academic instruction provision for every student individually is still very evident. The core conclusion is thus that teachers in special education continue to fall short in actually supplying their students with the appropriate individual academic instruction they need for optimal academic development.

The first implication is that special education teachers, given the diversity of students and their needs in these classes, should be given the time and support to plan their lessons explicitly and perform them according to those plans. Again, this is not new to the field of education. Looking back, 25 years since the introduction of his model in 1964, Carroll states: “All this will require still more attention than is now given, oftentimes, to educational management—to assessment and guidance of students, grouping and assignment of students to different educational programs, and planning the use of classroom time, among other things. It also will call for research to develop tools for educational management” (1989, p. 30). Currently, another quarter of a century further down the line, this appeal remains and cannot be stressed enough. Or, as Carroll puts it, "old models never die, they just get laid away" (1998, p. 30). Most recently, the governments of 193 states of the United Nations signed the Incheon Declaration for Education 2030 (2015), which sets out a new vision for education for the next fifteen years. All these states committed to making the necessary changes in education policies to
ensure that no one is left behind. They committed to focusing their efforts on the most disadvantaged, especially those with disabilities. Therefore, although the importance of appropriate instruction for students with special educational needs has been acknowledged for a long time, and since then emphasized repeatedly, it still has to be put into effect in daily practice in special education.

This commitment requires investment and change at all levels in the field of education. As the Incheon Declaration (2015) underlines, “‘business as usual’ will not bring quality education to all” (p. 25). Given the findings of this thesis, there are a number of directions that these investments could focus on. Smaller class sizes, for instance, generally appear to encourage higher levels of engagement and individual instruction (Jahnukainen, 2001; Zarghami, & Schnellert, 2004; Maggin, Wehby, Moore Partin, Robertson, & Oliver, 2011), with the provision, however, that the quality of instruction be guaranteed (Rivkin, Hanushek, & Kain, 2000). Forms of teacher assistance could also be helpful (Bettini, Kimerling, Park, & Murphy, 2015). Assistants can keep students occupied, enabling teachers to spend quality time with students during academic instruction (Webster, Blatchford, & Russell, 2013), provided, however, that these assistants are well prepared and trained (Maggin, Fallón, Hagermoser, Sanetti, & Ruberto, 2012), and as long as they are not substitutes for teachers. Peer tutoring, often recommended as an effective and economical strategy for adequate and efficient student-centred education, could also relieve teachers. However, this requires a lot of preparation and carefully combined dyads to be adapted to students with behavioural problems (Wehby et al., 2003; Barton-Arwood et al., 2005). Further research on these approaches to support teachers is crucial. Nevertheless, it is essential to test every approach selected for practical feasibility in daily practice in special education classes. Moreover, teachers should be closely involved and supported in development and implementation. It is for a good reason that the Incheon Declaration (2015) urges teachers and educators, to “bring classroom realities to the forefront of policy dialogue, policy-making and planning and provide a bridge between policy and practice, contributing their experiences as practitioners and their collective insights and expertise to overall policies and strategies” (p. 58).

The second implication of the findings of this thesis concerns the assessments as used in special education. It is important to note that assessment must also reach the zone of proximal development, and not only teaching. To find out what a student can or cannot master requires subtle and dialectic assessment. Only through precise observations and interactions between teacher and students is it possible to find out what students can
handle in classrooms. Clearly, the large-scale standardized assessment provided by CITO is far removed from such assessment. Especially since many of the tests were too difficult, and sometimes too easy, with respect to the outcomes on previous tests, testing did not reach the zone of proximal development. That being the case, these assessments hardly contribute to optimizing these students’ instruction and curriculum, making the very submission of these students to these tests as described in Chapter 6 highly questionable. Assessments are worth doing when they correspond to the curriculum and provide teachers and students with precise information about the students’ learning potential. Instead, the standardized large-scale assessment described in Chapter 6 just emphasized the students’ deficiencies compared to their typical peers. Since these students were referred to special education because they are different from their typical peers, it does not make sense to emphasize these differences. Therefore, instead of measuring students on performance levels or by comparing them to norm groups, it is better to measure the amount of academic progress each individual student makes between two points in time (Gong, Perie, & Dunn, 2006). Based on the students’ learning growth, they can be followed more accurately (Janssens, Rekers-Mombarg & Lacor, 2014), providing teachers with more precise information about the students’ zone of proximal development.

The third implication concerns the academic outcomes (reference levels) for language and maths that all students have to attain at the end of eighth grade and which are required by law. These levels, described in detail in various publications (OCW, 2010), apply to the students in mainstream and in special education. Accordingly, the curriculum offered to students in special education does not differ substantially from mainstream education, having the same standards and assessments. However, the extent to which it is reasonable for EBD students to be evaluated on these standards is doubtful (Zabel, Kaff, & Teagarden, 2011). Admittedly, if these reference levels prove unfeasible, schools are allowed to tailor the curriculum to the special needs of the students to guarantee a continuous development process. Yet teachers and administrators still have to describe the academic perspectives for these students in specific long-term goals (reference levels). It is doubtful to what extent these long-term goals match teaching in the zone of proximal development since the latter is guided by short-term attainable goals which suit the student at that specific moment. Moreover, the paperwork needed to offer students an alternative curriculum places another huge burden on teachers and can only be achieved if they are assisted in terms of time and support (Anthony, Tracey, & Mira, 2017; McCarthy & Lambert, 2006).
Clearly, providing systematic academic instruction to a class of students in special education demands a great deal from teachers. The bar is set high, namely providing all individual students with appropriate instruction based on their unique needs. Inevitably, at times teachers have to compromise their planning and the academic instruction. As Gerber puts it: "When students are significantly different in response to instruction, and assuming that teachers are working efficiently, teachers are forced to make choices with knowledge that they cannot achieve optimal outcomes for each and every student without significant and relevant new resources (and the motivation to use them)" (2005, p. 519). In the Incheon Declaration (2015), governments recognized that significant additional financing is needed and that resources should be used in the most effective manner to ensure quality education for all students.

In its latest vision document RENN4 states: "Good education is an ongoing working process and cannot be captured in formulas or in established recipes. Good education is essentially based on a right attitude and on the adaptive skills of the professionals involved" (RENN4, 2015). However, to establish good education, RENN4 must provide its professionals with the tools, time and trust to bring their great expertise into play and permit them to deliver the systematic academic instruction all students need. The students' zone of proximal development should lead this process, not reference levels, state-wide assessments or curricula.

7.4 Limitations and further research

Although the five studies described in this thesis provided us with valuable information on systematic academic instruction in special education classes, there are some limitations related to how the research was conducted. Firstly, the number of students the teacher had to manage in their class were not included in chapter 4. Chapter 5, however, shows that the number of students teachers have to instruct simultaneously influences the extent of systematic academic instruction every student achieves. It is therefore recommended that a third dimension be added to the two dimensions in our coordinate system described in chapter 3, namely the number of students. The more students, the harder it is to achieve the tailored approach systematic academic instruction students need. We strongly recommend to consider the number of students involved when evaluating the implementation and efficacy of interventions.
Secondly, all studies were conducted in RENN4 schools. Although there is no indication that RENN4 schools differ from special education in the rest of the Netherlands, the generalizability of this research would have been greater if other types of special education schools had been involved. It is therefore recommended that this research be extended to include other schools for special education, within and outside the Netherlands. Moreover, it would be very informative to perform this kind of study at mainstream education schools as well. The small study we conducted in mainstream education shows that it is unclear whether students with special needs are always better off in special education. In the context of inclusive education (*Passend Onderwijs*), research into the latter would not only be very timely but also very important to offer students the most suitable school possible.

Thirdly, we would like to emphasize that there are many other factors influencing the effect of systematic academic instruction on students’ academic development and behaviour. An optimal approach for EBD students involves collaboration between all relevant parties. These parties include the representatives of key social services as well as the students’ parents/guardians (Cohen, Linker, & Stutts, 2006). For instance, several studies have shown that the students’ academic performance improves significantly in schools where families are involved (Henderson & Mapp, 2002). Although not included in this study, these aspects are of crucial importance for students and for teachers and we therefore wish to emphasize and not underplay their importance.

As a final point, we would like to stress that classes are complex and dynamic systems, making it hard to determine direct causality between intervention and outcome. This becomes clear in our findings. Chapter 2, for instance, underlines the idiosyncrasy of the findings: all students labelled with EBD react in their own way and a ‘one-size-fits-all’ approach does not work for them. Group composition, for example, can negatively influence the effect of peer-assisted learning, which is otherwise generally regarded as an innovation with a strong evidence base (Sutherland & Snyder, 2007). As Koopmans (2014) stresses, dynamic systems are about recursive causal relationships in which cause and effect constantly feed into each other in an ongoing interrelationship. In the chapters 3 and 4 we tried overcome this problem by introducing the PDCA cycle, in which the effect of an instruction links directly to the following instruction. This is important because these cycles take academic instruction to the next level, affecting higher academic outcomes. Chapter 5, however, shows that there are other variables which intervene in this relationship, namely the amount of students a teacher has to instruct. Teachers have to go
through numerous PDCA cycles simultaneously, which makes it very difficult to complete these cycles in full. Likewise, Chapter 6 shows that the choice of assessments test level may have affected the test outcomes. Therefore, the design of the Chapter 4 study was limited to considering the input of systematic academic instruction and the output on academic and behaviour, and omitted in-depth analysis of processes which affected the relationship between the two. In short, this reduction of the instructional processes to simple input-output relationships disregards important detailed questions about the internal and external factors which might influence these relationships.

7.5 SEN and the art of teaching

To conclude, I would like to return to the core issue of this thesis, namely the art (skill or special ability) of teaching students with special educational needs. As attentive readers of this thesis will have noticed, the title is derived from Pirsig's bestseller 'Zen and the Art of Motorcycle Maintenance: An Inquiry into Values' (1974). In this book he states: “It is shallow to live only for some future goal. It's the sides of the mountain which sustain life, not the top. Here's where things grow” (p. 207). The same applies to teaching students with Special Educational Needs (SEN). Development is not primarily about some future goal but about the current situation and the next step (the zone of proximal development). Travelling this way, each next step is an unique and valuable result in itself, with the ultimate goal of enabling students to be able to do what they can do in collaboration today, independently tomorrow (Vygotsky, 1978). Therefore, it should be the reality of SEN students’ abilities and limitations and ZPD which should determine their instruction and guidance, not the reference scores determined by law. Yet Pirsig concludes by saying: “But of course, without the top you can't have any sides. It’s the top that defines the sides. So on we go, just one step after the next” (p. 207). Of course, it is important for teachers to determine a feasible top for EBD students. Moreover, it is even important to set the bar high, not underestimating the students' academic capabilities. This requires knowledge of the environment and of the right path on the one hand, and insight into the possibilities and limitations of the students they guide on the other. The art of teaching EBD students is in knowing both: the path and the student who has to walk that path. The challenge is to guide a number of students down their own distinct paths simultaneously. During this journey, the students’ problematic behaviour must be viewed as signals that the approach chosen is probably incorrect.
As depicted in the introduction, this thesis is meant to shed another light on existing interventions concerning teaching academics. The findings clarified that there is no deficiency in the knowledge of teaching EBD students, though there is a deficiency at the execution stage regarding the teaching of EBD students. As already noted, guiding a group of students is only possible if the teachers receive the tools, resources and support they need to succeed in this task. This requires proper governmental investment and the allocation of time. Governments, policymakers and administrators are accountable for providing their teachers with the resources they need to achieve the levels of performance we want from them. However, we will always have to deal with limited resources and teachers will always have to divide their attention between many students. Ultimately, the teachers remain the crucial factor. Since many roads lead to the top, it may be necessary for teachers to step off the beaten track to find alternative ways to lead and to scaffold students to an attainable goal. Herein lies quite a practical challenge for teachers, but it also takes personal courage to lead students down a different route. Such alternative paths should not be introduced into the school system by some external specialist, but must arise from the teachers themselves, in the schools where they are to be carried out.

To conclude, teaching EBD students in special education remains an immense challenge, requiring unconventional approaches. In his book, Pirsig describes ‘the old South Indian Monkey Trap’, a hollowed-out coconut, chained to a stake. The coconut has some rice inside which can be grabbed through a small hole. A monkey’s hand fits through the hole to grab the rice, but once clenched in its fist, it cannot be withdrawn. The monkey suddenly finds itself trapped, not in reality, but only by the idea it must hold tight onto the rice.

What is our rice and why do we cling to it?