Fostering the learning potential of at-risk students in the classroom
Tiekstra, Marlous

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Chapter 6
The next step in bridging the gap: a pilot study to enhance teacher’s skills with at-risk children

This chapter is based on:
Tiekstra, M., Minnaert, A., Hessels, M., & Verdel, R. (in prep.).
The next step in bridging the gap: a pilot study to enhance teacher’s skills with at-risk children.
Abstract

It has been demonstrated that teachers rarely provide instruction tailored to specific needs of students. Teachers seem to lack these tailored oriented skills, especially in the case of at-risk students. In this pilot study, an intervention was developed to enhance teacher’s skills in the general classroom in order to foster students’ learning potential. Since implicit theories of intelligence influence teacher’s behaviour these were also taken into account. A short intervention of four sessions was implemented at a school team (N=21) of one primary school. The sessions focused on mediational techniques, learning potential, the use of (dynamic) assessment, and translation to classroom practice. The results showed a significant change in beliefs of intelligence, but not yet in teacher’s behaviour. Multilevel growth curve analysis showed the significant contribution of self-efficacy to the increase of incremental views on intelligence. It is recommended that in order to change teacher behaviour, beliefs and self-efficacy should be taken into account.
Introduction

Students that are at-risk for learning difficulties, or seen to be eligible for special education, often lack problem solving skills. These students, therefore, need more guidance in the classroom. Several studies demonstrated that it seems difficult for teachers to provide guidance which is tailored to the students’ needs (Steenbeek, Jansen, & Van Geert, 2012; Sutherland, Lewis-Palmer, Stichter & Morgan, 2008). Dymond and Russell (2004) showed in their observational research that teachers rarely adapt their instruction to the needs of students with mild intellectual disabilities, while they do for students with severe disabilities. In the latter case, teachers are often supported by an educational psychologist or other professional, and consequently, feel less responsible for the learning processes of these students in the classroom. It is a striking conclusion that students with learning problems are submitted to general classroom instruction without any adaptation. Generally, teachers’ actions should be based upon Individualised Educational Plans (IEP). However, problems emerge when translating IEPs to the classroom. Clearly, teachers lack skills to adapt their instruction to mild problems, which are eminent in the daily inclusive classroom practice. Since teachers play a leading part in learning processes of students (e.g., Hattie, 2009), there is a need for teacher professionalisation or interventions at teacher level that aim at improving their skills for adequately teaching students with mild intellectual disabilities.

However, a focus on skills solely is not in congruence with theory, since teachers’ beliefs have been demonstrated to also play a role in the instruction teachers provide. Teachers’ self-efficacy has an impact on behaviour in the classroom (e.g., Tschannen-Moran & Woolfolk Hoy, 2001). Self-efficacy refers to the belief in one’s own capacity to achieve a certain performance, and is context dependent (Bandura, 1997). Imants and De Brabander (1996) define teachers’ sense of efficacy as “the extent to which teachers believe they can affect student learning” (p.179). More specifically, as demonstrated by Gibbs and Powell (2012), teachers’ self-efficacy is composed of their belief in efficacy for classroom management, children’s engagement, and instructional strategies. Previous experiences and feedback from the environment influence self-efficacy.
Furthermore, teachers’ actions in daily classroom practice are influenced by implicit theories of intelligence (Tiekstra & Minnaert, submitted). Dweck and colleagues have shown in their extensive research that people hold implicit theories of intelligence, with either an incremental or entity view, and that these views affect people’s behaviour (e.g. Dweck, Chiu, & Hong, 1995). In the incremental view intelligence is considered as malleable, which is in contrast to the entity view in which intelligence is seen as something stable and not subjective to change. Implicit theories of intelligence influence the quality of interactions, as was demonstrated by Moorman and Pomerantz (2010) with regard to mothers and their children. This also holds for teachers (Tiekstra & Minnaert, submitted). For instance, teachers supporting the entity view tend to practice direct instruction with, essentially, a focus on performances. Teachers with an incremental view, on the contrary, support mastery-oriented learning and focus on the learning process instead of the learning result. Jordan and Stanovich (2001) demonstrated that teachers with an incremental view were more frequently involved with at-risk students than teachers holding an entity view, since these teachers feel more responsible for their students’ learning processes. Implicit theories of intelligence, thus, affect the way in which instruction is effectuated in the classroom. Accordingly, students’ learning is influenced by different teaching strategies (Rozendaal, Minnaert, & Boekaerts, 2005; Timperly & Parr, 2009). This means that an incremental approach is important for the classroom situation: intelligence should be seen as malleable, and every individual has potential which could be fostered by teachers’ actions.

**The intervention (theoretical background)**

The aim of this study was to explore the effectiveness of an intervention aiming at the enhancement of teachers’ skills and incremental views in order to foster students’ learning potential. An incremental view on intelligence is a prerequisite for fostering learning potential in the classroom. Blackwell, Trzesniewski and Dweck (2007) demonstrated the effectiveness of intervening on theories of intelligence. More specifically, students who were taught that intelligence is malleable (incremental view) showed more positive motivational patterns which, in turn, caused higher grades. This underlines the need for incremental views in
education, and that intervening on such core beliefs can have huge impacts on students’ learning. The intervention in the study of Blackwell et al. (2007), however, was targeted at students. In our intervention, in line with the above, we self-evidently intervene on the level of teachers, since they play a crucial role in fostering a student’s learning potential.

To realise a student’s potential, teachers should explore and, accordingly, teach in the student’s zone of proximal development (ZPD). According to Vygotsky (1978), only in this way learning occurs. The teacher has a mediating role, and should be sensitive to the specific needs of students. Feuerstein’s Instrumental Enrichment is an operationalisation of these Vygotskian principles, and was originally developed for individualised intervention situations (Feuerstein, Rand, & Hoffman, 1979). It is possible, though, to translate the intervention principles to general classroom education. By asking mediating questions and focus upon students’ learning processes, general cognitive teaching in the ZPD can be fostered. Currently, teachers lack the skills and knowledge to execute such cognitive education, as highlighted by Hessels and Hessels-Schlatter (2013).

Since teachers play a paramount role in students’ learning processes, they should be reflective upon their own actions (Jennings & Greenberg, 2009; Steenbeek et al., 2012). Insight in their own learning and acting has a positive influence on teachers’ effective behaviour in individual differences of students (Rosenfeld & Rosenfeld, 2008). Moreover, it has been demonstrated that reflecting and evaluating is an important feature of teacher professionalisation (Meirink, Meijer, Verloop, & Bergen, 2009; Runhaar, Sanders, & Yang, 2010). Therefore, an important aspect of our intervention was to emphasise the role teachers play in learning processes and to help reflect collaboratively on this issue.

In sum, the rationale of our intervention was that in order to develop a dynamic, (meta) cognitive teaching style in teachers that fosters the students’ learning potential, one should support an incremental view of intelligence. Since Meirink et al. (2009) showed that changing teachers’ beliefs is a complex task, the focus of the intervention was more on teachers’ activities in the classroom with at-risk children, than on changing
their implicit theory of intelligence. In this way, the intervention was closely tailored to teachers’ experiences in the classroom, accounting for the benefit of the implementation of the intervention.

**Interventions in educational contexts**

When implementing interventions one should take into account the ecology in which the intervention takes place. Prince, Tickstra, and Minnaert (2014) showed that the educational context is composed of a web of agents who all have their own beliefs and intentions, which causes a complex ecology for interventions. To eliminate implementation bias, these authors stressed the necessity for collaboration, and a shared vision and language among participants, including the researcher.

Yeager and Walton (2011) also emphasised the importance of taking contextual effects into account when generalising effects of educational interventions. Several authors (e.g., Boekaerts & Minnaert, 2003; Levin & O’Donnell, 1999; Sternberg et al., 2006) recommend testing interventions in pilot studies first, before executing large scale randomised control trials (for more information, see Prince et al., 2014). Accordingly, the relevance and effectiveness of the content of our intervention was studied for the first time by implementing it in one school only. In this way, the context remained controllable over time and we could tailor the intervention to exclude contextual influences and improve implementation. Although school-specific, the theoretical principles of the intervention remained the same. The main research question in this study addressed the extent to which the intervention accounted for a change in belief and behaviour of the participants, taking teachers’ self-efficacy into account.
Method

Participants
The school that was selected for this study was a primary school in the western part of the Netherlands. This area accommodates more immigrant families compared to other parts of the Netherlands, implying a very diverse school population. This school, however, can be characterised as a typical, average school.

Our emphasis on a “shared language” among school members demanded the participation of the whole school team. The school board endorsed this viewpoint and agreed to participate in the first training session to show their support. Generally, support of directors is in favour of implementation (see Prince et al., 2014). Every educational professional working at the school participated, which resulted in a total of \( N = 21 \), all females.

The school team consisted of three elementary school teachers, seven middle school teachers (grade 3 – 5), four teachers for the upper-level classes (grade 6 – 8), and for one teacher it was unknown in which grade she taught. Next, six participants mentioned that they taught in several classes, one of whom was a remedial teacher, one school psychologist, the general coordinator (assistant director), and the special care coordinator (assistant director). The mean working experience of the school team was 10.3 years. Nine participants were very experienced (> 10 years), five had average experience (4 – 10 years), and five were less experienced (0 – 3 years). All participants will be referred to as “teachers” in the rest of the article.

Procedure
The intervention comprehended four two-hour sessions over a period of two weeks at the beginning of the school year (September/October 2013). The study comprised a pre-test, post-test, and a follow-up measure. The baseline measurement (pre-test, \( N = 21 \)) was administered before starting the first training session (week 0). Immediately after the last
training session, the post-test ($N=15$) was conducted (week 2). The follow-up measurement ($N=19$) was carried out four weeks after the last training session (week 6).

**Training.** Several studies of A. Minnaert and colleagues (personal communication, March 11, 2013; May 23, 2014) showed that a short period of intensive training with a maximum of two weeks provides more robust longitudinal effects than a training which lasts several months. Moreover, Meirink et al. (2009) underlined the importance of a combination of collaborative reflection with colleagues and immediate utilisation of new ideas in the classroom when changing teacher's beliefs. Therefore, four two-hour training sessions distributed over a period of two weeks were carried out. In this way, learned material could be tested in the classroom and each session started with a reflection on participants' own experiences. Sessions focused on mediational principles, reflection upon role of the teacher in the learning processes, the use of assessment outcomes for setting up IEPs, and placed emphasis on learning potential and the malleability of intelligence. See the appendix for a more detailed description of the individual training sessions.

**Implementation.** In anticipation of the research, to warrant implementation, a series of meetings was organised with a local educational advisory agency to develop the training. In a next step, a meeting with the school board took place to tailor the intervention to the specific needs of the school. As mentioned, the intervention aimed at the whole school team to warrant a shared language within the school. The training was conducted by the first author (who is an educational psychologist) together with two professional trainers from the educational advisory agency. This assured control over the exact content of the training. Moreover, observations and evaluations of each training session provided the feedback needed to adjust the training where needed to guarantee its full applicability. The two members of the school board who participated in the training provided the researchers with feedback about the reactions within the school team after each training session, allowing us to further adjust, or to attend to certain aspects more thoroughly.
Measurements

A questionnaire was administered to measure the effects of the intervention on several variables listed below. Additionally, observations were carried out during the training sessions and interviews after each training guided the implementation process.

Teacher behaviour. Teachers’ behaviours in the classroom were evaluated by means of a questionnaire comprising statements with a vignette. Six questions followed a vignette that described a specific classroom situation around a student in grade 3 with a learning problem. These focused on daily classroom practices, and had anchors indicating either a dynamic (incremental) approach (4) or a static (entity) approach (1) of the case. For example, item 2 addressed the individual approach to the specific student: During a one-to-one moment with student M., … I explain the exercise once again (static approach), or … I ask the student how she is going to tackle the problem in the exercise (dynamic approach). The other items referred to teacher’s behaviour in group wise instruction, student’s learning problem, consultation of the special care coordinator, and setting up and evaluation of an IEP. The higher the total score, the more dynamic is teacher behaviour. In this way we could investigate whether teachers’ intentions in the daily classroom practice had changed after our intervention. The vignette showed a reliability of Cronbach’s α .68 at pre-test. A vignette similar to the pre-test (same classroom situation, different problems) was administered six weeks later at the follow-up (α .61).

Implicit theories of intelligence. Next to behaviour, implicit theories of intelligence (ITI) were assessed. The validated and widely used ITI-scale of Dweck et al. (1995) was converted into items appropriate for Dutch teachers. The scale, comprising three items, was administered at pre-test (α .85), post-test (α .82), and follow-up (α .88). A higher score indicates a greater entity (static) view on intelligence (min. 3, max. 15).

Self-efficacy. Five items (pre-test, α .82) assessed self-efficacy of teachers. This scale was retrieved from Opdenakker (2008) who tested the scale in different educational contexts. Mean scale scores (min. 5, max. 25) were calculated to be used in the analysis.
A higher score indicates a greater sense of self-efficacy.

**Observations and interviews.** Each training session has been observed and evaluated by the trainers (including the researcher). Moreover, each session was evaluated by the school board. They informed the researcher about reactions and changes within their team during the intervention. After the administration of the follow-up questionnaire (week 6) a final interview took place with several participants of the training, and the school board in particular. This interview focused on perceived differences within the school team.

**Analysis**

In order to measure the effect of the training, descriptive analyses of scale and data distributions were carried out first. Effect sizes (Cohen’s $d$) were calculated per item measuring teacher behaviour. To minimise capitalisation on chance, it was decided that only Cohen’s $d$’s of $\geq .50$ accounted for a change.

The change in participants’ beliefs could be measured at post-test and follow-up. Unfortunately, at post-test, we were confronted with a dropout rate of $33\%$. A detailed analysis revealed that participants with a rather static view at pre-test did not participate at post-test. A mixed model approach was employed to explore whether results were independent of this dropout. Mixed models do not simply impute missing values, but calculate a function to estimate these missing values, based on the functions that the model estimated for the rest of the data. We conducted a specific kind of mixed models, that is multilevel growth curve analyses in which measurements (time) were units within participants, on the implicit theories variable. In this way, a trend analysis of the ITI measure on pre, post and follow-up could be established independently of dropout. It was further investigated whether self-efficacy influenced the outcomes in a next multilevel growth curve model.
The qualitative information from the final interview has been used to complement and illustrate the results of these analyses.

Results

Change in behaviour

Vignette. The descriptive analysis of the pre-test showed that scores on the vignette-scale were quite high already ($M = 20.6$ out of max. 24), and the effect size of difference between pre-test and follow-up of the vignette as a scale appeared to be relatively low (Cohen’s $d = -0.09$). However, detailed analysis of each item separately showed some substantial differences in distributions of scores on pre-test and follow-up. Therefore, effect sizes were calculated for each item separately. As showed in Table 1, these ranged from -0.43 to 0.65. The considerable effect of $d = 0.65$ was found for item 2 referring to individual instruction. Since a higher score implied more dynamic behaviour of the teacher, a positive Cohen’s $d$ was desired.

Table 1 | Overview of effect sizes per item measuring teacher behaviour

<table>
<thead>
<tr>
<th>Item</th>
<th>Cohen’s $d$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group wise instruction</td>
<td>-0.43</td>
</tr>
<tr>
<td>Individual instruction</td>
<td>0.65</td>
</tr>
<tr>
<td>Student’s learning problem</td>
<td>0.09</td>
</tr>
<tr>
<td>Special care coordinator consultation</td>
<td>-0.41</td>
</tr>
<tr>
<td>Setting up IEP</td>
<td>-0.06</td>
</tr>
<tr>
<td>Evaluation of IEP</td>
<td>-0.27</td>
</tr>
</tbody>
</table>
Interview. The final interview with the school board and several teachers revealed that the school team had re-evaluated their group and individualised educational plans several weeks after the intervention. Moreover, the school board remarked a difference in some teachers with respect to their approach of students, and in the format of their meetings about students. According to the school board, a trend was noticeable in the change of behaviour of the school team.

Change in belief
Implicit theories of intelligence. Descriptive analysis revealed a trend in the mean scores of the participants: from a relatively strong entity view on intelligence at pre-test ($M = 7.6$) to a rather incremental view at post-test ($M = 5.6$). This trend flattened out at follow-up ($M = 6.4$). We investigated whether these results were biased by the dropouts at post-test, which turned out not to be the case. The multilevel quadratic growth curve model fitted the data best. The decline in static view appeared to be significant ($\text{Time } p < .001$), as was the upward trend between post-test and follow-up ($\text{Time}^2 p .003$). Table 2 shows the modelling results. A picture of the trend in implicit theories of intelligence can be seen in Figure 1.
Table 2 | Multilevel growth curve model of implicit theories over time (N = 54)

<table>
<thead>
<tr>
<th>Implicit theories of intelligence</th>
<th>Coefficient</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>7.619*</td>
<td>.466</td>
</tr>
<tr>
<td>Time</td>
<td>-2.600*</td>
<td>.811</td>
</tr>
<tr>
<td>Time^2</td>
<td>.755*</td>
<td>.256</td>
</tr>
<tr>
<td><strong>Random effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 2 variance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>2.086</td>
<td>1.455</td>
</tr>
<tr>
<td>Time</td>
<td>.049</td>
<td>.279</td>
</tr>
<tr>
<td>Intercept*time</td>
<td>.080</td>
<td>.472</td>
</tr>
<tr>
<td>Time^2</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Intercept*time^2</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Time*time^2</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Level 1 variance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>2.476*</td>
<td>.938</td>
</tr>
<tr>
<td>Deviance</td>
<td>229.486</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p* ≤ .01
Self-efficacy and implicit theories of intelligence. The question arose whether self-efficacy influenced the curve of the model. Another quadratic multilevel growth curve model, including self-efficacy intercept, and interactions of self-efficacy with time and time$^2$ (quadratic part), appeared to be the best fitting model to the data. Table 3 shows the outcomes of this analysis. The fixed effect of self-efficacy is not significant. However, the interaction with time is nearly significant (self-efficacy*time $p = .051$) at 5% level. The upward trend is also significant at 10% level (self-efficacy*time$^2$ $p = .095$). Figure 2 provides more insight into this issue. The decline between pre-test and post-test is different for participants with more or less self-efficacy.
Table 3 | Multilevel growth curve model of implicit theories over time, taking self-efficacy into account ($N = 51$)

<table>
<thead>
<tr>
<th>Implicit theories of intelligence</th>
<th>Coefficient</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>8.583**</td>
<td>3.214</td>
</tr>
<tr>
<td>Time</td>
<td>7.491</td>
<td>5.224</td>
</tr>
<tr>
<td>Time 2</td>
<td>-1.971</td>
<td>1.638</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>-.221</td>
<td>.797</td>
</tr>
<tr>
<td>Self-efficacy * Time</td>
<td>-2.549 †</td>
<td>1.31</td>
</tr>
<tr>
<td>Self-efficacy * Time 2</td>
<td>.686 †</td>
<td>.411</td>
</tr>
<tr>
<td><strong>Random effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 2 variance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>1.791*</td>
<td>.908</td>
</tr>
<tr>
<td>Time</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Intercept * time</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Time 2</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Intercept * time 2</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Time * time 2</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Level 1 variance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>2.404**</td>
<td>.605</td>
</tr>
<tr>
<td>Deviance</td>
<td>210.494</td>
<td></td>
</tr>
</tbody>
</table>

*Note. * $p ≤ .05$, and ** $p ≤ .01$, and † $p ≤ .10$
Figure 2 | The influence of self-efficacy on scores on implicit theory of intelligence (the higher a score, the more entity oriented a view) on pre-test, post-test, and follow-up. The line at the top indicates a relative low mean score (3) on self-efficacy, whereas the line at the bottom implies a high mean score (5) on self-efficacy.

The higher self-efficacy at the start of the intervention, the more decline in static views (nearly at 5% alpha level), and the more maintenance effect of this decline in the follow-up measure. It should be noticed, however, that the interaction effect in the quadratic part (upward line between post-test and follow-up) was significant at 10 % alpha level. This is related to power problems: the small sample size affects the level of alpha (Carmines & Zeller, 1979). The influence of self-efficacy in the enhancement of an incremental view is shown in figure 2. These results indicate a differential effect in which self-efficacy makes a difference in the long term in favour of the incremental view.
Discussion
The goal of this pilot study was to investigate whether teachers’ skills to effectively adapt their instruction in order to foster student’s learning potential in the classroom could be enhanced. A short, intensive, intervention was implemented in one school team (N=21) to explore the extent to which their behaviour and beliefs would change during the intervention. The results showed a substantial change in participants’ beliefs about intelligence, but did not provide enough proof for a change in teacher’s behaviour.

Change in belief
Multilevel growth curve analysis showed a significant decline in the trend of static implicit theories of intelligence after the training: the rather static (entity) views at the beginning changed in more dynamic (incremental) views immediately after the training, which remained present at follow-up, although to a lesser extent. The intervention provided more incremental views on intelligence among participants which sustained over (at least) six weeks of time.

The effectiveness of the training, however, was moderated by self-efficacy of participants. More self-efficacy at the start of the project seemed to produce more decline in static beliefs about intelligence over time. This illustrates the need for emphasis on self-efficacy in teacher professionalisation, implying that actions in the classroom should be a key aspect in interventions in order to achieve effects. Teachers learn from their actions, which demands for a recursive design of studies (see also Boekaerts & Minnaert, 2003). In this pilot study, teachers were trained in metacognitive teaching and reflection upon their own teaching. Although the change in beliefs of participants was a promising result, reflection, an explorative attitude towards students’ learning problems, and metacognitive teaching should be embodied in teacher education. The teacher’s belief in own actions in the classroom may be an important contributor to incremental views on intelligence in educational practice, as well as it might be to skills for metacognitive teaching.
**Change in behaviour**

Due to the restriction in measurement of change in behaviour in this pilot study, it remained unclear whether these changes in beliefs affect changes in classroom situations. Some outcomes indicated a change in behaviour. The vignette study showed a significant change with a large effect size in a more dynamic approach of individual learning situations in this school. Due to an unfortunate ceiling effect, however, the vignette can be regarded as not discriminative enough. Moreover, it was a self-report measure, and there was a lack of observations in the classroom that could have been used to assess change in teacher’s behaviour. Nevertheless, the final interview with the school board and several teachers revealed some promising indications for change of behaviour taking place in the school team. Perhaps, the information of the intervention needed more time to be assimilated by the teachers, which implies that the results in change of behaviour should have been measured after a longer period of time.

The change in belief about IQ testing is an important finding with respect to the implementation of dynamic assessment (DA) in practice. As highlighted by several authors (e.g., Deutsch & Reynolds, 2000; Elliott, 2003), dynamic assessment is only scarcely implemented in practice, regardless of many advantages over static testing in at-risk populations. As a next step in bridging the gap between assessment and classroom instruction, this pilot study showed that specific training is needed in order to change the beliefs about IQ testing within school teams. In order to effectuate full implementation of DA in educational practice, specific training of educational psychologists in dynamic assessment is needed. Yet, being another important aspect to this issue, teachers too, should embody a general “incremental attitude” towards learning (Hessels & Hessels-Schlatter, 2013).

**Future directions**

The current pilot study revealed some important aspects to consider in future research. As Yeager and Walton (2011) underlined “an incremental mindset intervention might have no effect if students believe that the person who tells them about their potential...
for growth and improvement does not believe this himself or herself.” (p.290). Although our intervention focused on behaviour of teachers in the classroom, a positive change at student level was desired. Therefore, we recommend taking students’ outcomes into account in future research.

Furthermore, since the pilot study was conducted at one single school, the results could be subject to specific characteristics of this school. Studies at multiple schools should be performed to investigate the school effects. Schools in which the intervention is implemented should be compared to schools in a control group. Observations in the classroom context should be carried out instead of self-report measures. Moreover, results should be measured in a long term perspective, to investigate the maintenance effect of change in belief and behaviour.

This pilot study showed that a short intervention changed participants’ static beliefs about intelligence into more incremental (dynamic) views. Despite the fact that a change in one’s own beliefs is influenced by one’s individual pre-existing beliefs (Meirink, et al., 2009), the whole school team demonstrated a decline in static views. This is a promising outcome and proves ground for future research in the issue of fostering student’s potential in the classroom. The decline in static views over time was subject to participants’ self-efficacy. In order to change teacher behaviour, the contribution of beliefs and self-efficacy to this issue should not be disregarded. Therefore, when trying to change behaviour in interventions, beliefs and self-efficacy should be taken into account.
## Appendix | Description of the training sessions

### Training session 1

**Goal**
To experience the connection between vision on individual differences and one's own teaching actions in the classroom.

**Contents**
- Participants' views on intelligence
- How do you act upon individual differences in intelligence?

**Intended aims**
- **belief**: Individual differences demand an incremental view on intelligence
- **behaviour**: A shared language among members school team

### Training session 2

**Goal**
To learn about the role of the teacher in student's learning process.

**Contents**
- Zone of Proximal Development
- Role of the teacher as mediator in individual learning processes
- Metacognitive teaching in individual learning situations

**Intended aims**
- **belief**: Every student can learn (= incremental view on intelligence)
- **behaviour**: Enhancing skills in metacognitive teaching
## Training session 3

**Goal**
To learn about the role of the teacher in the general classroom and at-risk students

**Contents**
- Steps in cognitive and motivational development
- Setting up group vs. individual educational plans
- Setting up “dynamic” educational plans
- At-risk students in the classroom and the role of the teacher

**Intended aims**

<table>
<thead>
<tr>
<th>belief</th>
<th>Teachers play central role in intellectual development student</th>
</tr>
</thead>
<tbody>
<tr>
<td>behaviour</td>
<td>Setting up educational plans as guidance to tailored instruction; focus on student’s outcomes &amp; teacher behaviour when reflecting upon plans</td>
</tr>
</tbody>
</table>

## Training session 4

**Goal**
To learn how to use (meta)cognitive teaching strategies (“mediation”) in daily classroom practice

**Contents**
- Mediation techniques during dynamic assessment
- Link to classroom situation: mediation techniques in practice

**Intended aims**

<table>
<thead>
<tr>
<th>belief</th>
<th>Incremental view on learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>behaviour</td>
<td>Enhancing metacognitive skills in group wise and individual learning situations</td>
</tr>
</tbody>
</table>
“I cannot teach anybody anything. I can only make them think.”

(Socrates)