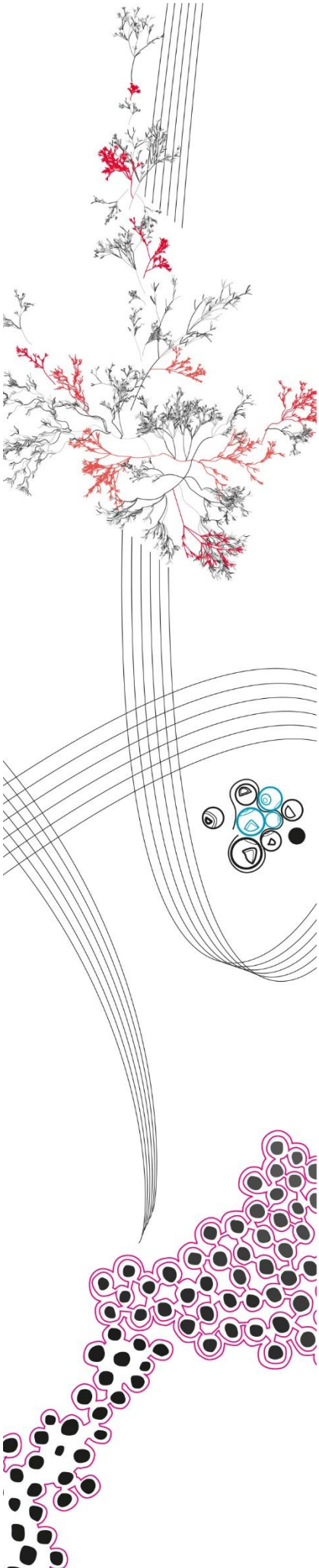

Influence of Anchored Empowerment on Commitment to Change

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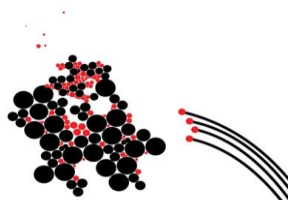
Abstract

Developing teachers' commitment to change is essential in order to succeed an educational change. However, to date, there is a lack of knowledge about how to develop commitment to change. Earlier studies have shown that anchoring is a technique that allows people to unconsciously influence their decision making and thoughts. Therefore, the aim of this study is to investigate the influence of anchored empowerment on teachers' (affective, continuance and normative) commitment to change. In addition, the differences in gender and job satisfaction are also examined. In order to investigate this, a quasi-experimental design was established. In total 205 Dutch secondary school teachers participated and were randomly assigned to one of the three conditions: encouraging anchor, discouraging anchor or control group without an anchor. The results indicated that both an encouraging anchor and a discouraging anchor did not influence teachers' commitment to change. Moreover, no difference was found between male and female teachers in influencing their commitment to change via the anchoring technique. In addition, no differences were found between the extent to which satisfied teachers and unsatisfied teachers were committed to change. While the results did not confirm the scientifically based hypotheses, this study provides a new perspective in educational science which makes the results an insightful starting point for further research. It is suggested that further research investigates the effect of priming on teachers' commitment. Alternatively, further research should develop the definition of empowerment, adapts the presented anchor values and plausible values, and finally critically examines the validity of the questionnaire.

Keywords: educational change, change management, affective, continuance, normative, commitment to change, anchoring, empowerment.

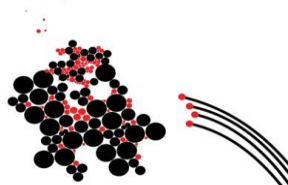


In today's society, organisations have to change continuously in order to stay competitive, survive and grow. They have to continuously respond to what is happening in the rapidly evolving world, such as environmental problems, technological innovations and a constantly fluctuating economy (Thomas & Hardy, 2011). In addition to business environments, educational environments also need to change and respond to the rapidly evolving environment (Marshall, 2010). This need for change is reflected in a) the introduction of innovative (digital) learning techniques, b) the transformation from result-oriented teaching to process-oriented teaching and c) the act of centralising the individual learner's need (Gerards, 2017; Prensky, 2011). Teachers are expected to adapt to these changes in order to provide appropriate education to the individual needs of the students (Petrou, Demerouti, & Breevaart, 2013; Prensky, 2011)

Unfortunately, many changes fail because the focus during the process is on the importance of implementing the change rather than involving, guiding and supporting the teachers who are expected to change (by e.g., Demers, Forrer, Leibowitz, & Cahill, 1996; Herold, Fedor, & Caldwell, 2007; Meyer, Srinivas, Lal, & Topolnytsky, 2007). Additionally, many studies on this topic investigate the need for educational change, but fail to provide answers to how such change can be implemented (Biggart, 1977; Herscovitch & Meyer, 2002; Petrou et al., 2013). There is little discussion in scientific literature about the role of teachers during an educational change. However, teachers who are committed to change are crucial during educational change (by e.g., Armenakis, Harris, & Mossholder, 1993; Elias, 2009). In fact, commitment to change is considered as one of the most valuable aspects in change initiatives, because teachers who are committed to change are more willing to support the change which leads to effective implementation (Demers et al., 1996; Herold et al., 2007).

To increase the teachers' commitment to change, it is important to investigate what factors influence commitment. Previous studies indicate arguments that it is possible to unconsciously influence teachers' commitment (e.g., Hutner & Markman, 2016). A plausible influencing technique is anchoring (Tversky & Kahneman, 1974). Anchoring is a technique that unconsciously influence people by certain information, prior to making a judgement (Furnham & Boo, 2011). Consequently, this research will investigate the influence of anchoring on secondary education teachers' commitment to change.

Currently, no research has yet been done into the unconscious influence of teachers' commitment via anchoring (Furnham & Boo, 2011). Therefore, this research is an essential addition to science in order to learn more about the unconscious influence of teachers' commitment. Consequently, the results can contribute to a successful change implementation.



Theoretical Framework

This section will first explain educational changes. Second, the importance and definition of commitment to change will be explained. Thereafter, it will be discussed how commitment to change can be developed through anchoring. Anchoring is will also be discussed. Finally, two demographic variables are highlighted that may affect the influence technique.

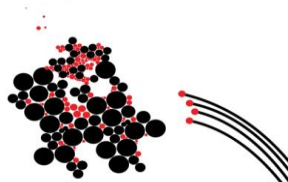
Educational Change

The purpose of educational change is to ensure the quality of education and can be defined as a process of which the first step involves the initiation of change, the second step is that teachers put the change initiative into practice and finally, that the change initiative is adopted by the majority of the teachers (Baglibel, Samancioglu, & Crow, 2018). Furthermore, educational changes can involve policy changes from national policies, but it can also contain a change in a classroom or in a school itself (Baglibel et al., 2018;Sancho, 2004). Such changes require teachers to adapt their behaviour to cope with these changes. However, applying new teaching behaviours effectively, requires a commitment by the teachers to the change (Elias, 2009; Herscovitch & Meyer, 2002), priming the question of how commitment to change can be accomplished.

Commitment to Change

Teachers' commitment to change is one of the most important factors for change to be successful (Herold et al., 2007; Herscovitch & Meyer, 2002). For example, Herscovitch and Meyer (2002) argued that employees who are committed to change are more inclined to support the change. In fact, without support for the change by teachers, even the best developed change initiatives would fail (Cunningham, 2006). Furthermore, Conner (1992) reasoned that commitment to change connects the goals of the change with the employees which in term enables the teachers to change. As such teachers' commitment to change has a positive effect on the effectiveness and success of the change implementation (Bowe, Lahey, Kegan, & Armstrong, 2003; Levišauskienė, & Ramanauskas, 2004; Mangundjaya, 2014; Naotunna, 2013).

Conner (1992) defined commitment to change as the bridge between employees and the change goals. The definition of Connor (1992) was further developed by Herscovitch and Meyer (2002), who redefined the concept as a mind-set that connects an individual to a certain action which is necessary for a change to succeed. The last definition is based on the three-component model of organisational commitment of Meyer and Allen (1991). Commitment can be divided in three mind-sets: affective commitment (desire), continuance



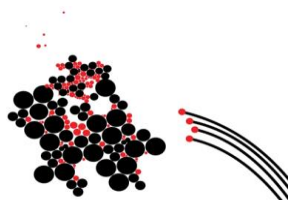
commitment (perceived costs) or normative commitment (obligation) (Meyer & Herscovitch, 2001). Meyer and Herscovitch (2001) argued that the essence of commitment is generalizable, regardless of the purpose of that commitment. Consequently, Herscovitch and Meyer (2002) specified this definition of commitment to change for their own research. Based on the definition of Herscovitch and Meyer (2002), commitment to change can take three different forms: (1) the desire to contribute to change based on trust in its inherent benefits (affective commitment to change), (2) a recognition that not supporting the change has individual costs (continuance commitment to change), and (3) the feeling that supporting the change is mandatory (normative commitment to change).

Affective commitment to change. Affective commitment to change refers to employee's emotional connection to the change (Meyer & Allen, 1991). Employees feel identified and involved in the goal of the change. Meyer and Allen (1991) argued that affective commitment to change is influenced by personal characteristics of employees, organisational structure and work experiences of employees.

Moreover, employees who believe in the value of the change, and see it as a good strategy for the organisation, are more likely to participate in the change program (Herscovitch & Meyer, 2002). Their participation is based on trust in the benefits of the change. For instance, teachers who believe that change initiatives have a positive impact on their workload are more likely change.

Continuance commitment to change. Continuance commitment to change is about employees' individual costs associated with not participating in the change. As perceived costs increase, employees are less likely to participate in the change (Meyer & Allen, 1991). Costs may include losing a job, downgrading to a lower function, losing attractive benefits and disrupting personal relationships (Herscovitch & Meyer, 2002; Meyer & Allen, 1991). However, if there is no threat to individual costs, teachers will be more continuance committed. For example employees who feel pressure to participate in the change and for whom it is too costly to resist the change are more continuance committed (Herscovitch & Meyer, 2002). In sum, when employees experience a small personal cost-investment and experience significant gains, it is expected that teachers are more inclined to participate.

Normative commitment to change. In the context of normative commitment, employees feel morally obliged to participate in the change, for example because the organisation is unable to exist without them (Herscovitch & Meyer, 2002). The normative commitment to change of employees will increase if the organisation invest in its employees.

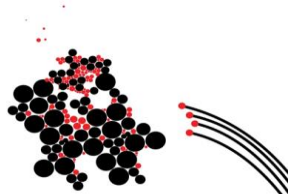


For instance, organizing courses, training or workshops for teachers. Through investments, employees feel more obliged to contribute to the change (Meyer & Allen, 1991).

As mentioned earlier, teachers who are committed to the educational change are crucial for a successful implementation of change initiatives. Therefore, it is relevant for change practitioners to understand how they can best develop commitment to change among teachers. The level of commitment to change and the final decision whether or not to change is determined by teachers' beliefs and judgements (Hutner & Markman, 2016). Consequently, influencing thoughts, beliefs or statements that concern their commitment to change might increase their commitment to change (Kahneman & Klein, 2009; Tversky & Kahneman, 1974).

Developing Commitment to Change: Anchoring

In order to unconsciously influence teachers' judgements of commitment to change, this research uses an anchoring technique. Anchoring involves a process in which people are influenced by certain information, prior to making a judgement (Furnham & Boo, 2011). In addition, according to Englich (2008), anchoring is making a numerical estimate based on a previously considered norm. As such, people base their decision on a starting point that can be seen as an unconscious suggestion (Tversky & Kahneman, 1974). For example, an estimate of the average starting annual salary of college graduates in the United States was requested in the research of Wegener, Petty, Detweiler-Bedell and Jarvis (2001). Participants were first asked whether the salary amount per year was higher or lower than the presented anchor value. The value differed per experimental group. For example the value in one group was $8,902,340 per year and in the other group $48 per year. Alternatively, anchor values can be uninformative and random since research found also effects in judgemental decisions with random generated anchor values (Furnham & Boo, 2011). For example values can be obtained by spinning a wheel (Tversky and Kahneman, 1974). Second, the participants were asked to provide an absolute estimate of the real value. Participants use the anchor as a cue in order to determine their judgement (Blankenship, Wegener, Petty, Detweiler-Bedell, & Macy, 2008). Results show that the estimates of the group who were provided with the higher anchor ($8,902,340 per year) were higher than the group who were provided with a lower anchor ($48 per year) (Wegener et al., 2001). Other studied anchor questions were about the record high hottest temperature for a day in Seattle (anchor values: 4° Fahrenheit; 28° Fahrenheit; 68° Fahrenheit; 128°; Fahrenheit; 285° Fahrenheit or 8,905° Fahrenheit); the age of George Washington when he died (anchor values: 2 years old; 13 years old; 41 years old; 91 years old; 167 years old or 167,054 years old) and the weight of Roman Emperor Julius Ceasar



(anchor values: 12 pounds; 70 pounds; 119 pounds; 312 pounds; 712 pounds; 71,200 pounds) (Wegener et al., 2001).

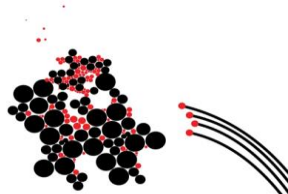
In this research, standard anchoring will be used. This means that the teachers make a numerical estimate based on a comparison with an absolute number (Englich, 2008). To illustrate, teachers are asked to indicate the extent to which they are enthusiastic about the set goals as set out by the educational institute, considering whether this value is higher or lower than 7.1. The value 7.1 is the anchor that they use to make a judgement when giving their score. The results of this group are expected to be higher than those of a group that receives an anchor with a lower value of 4.9 (Tversky & Kahneman, 1974). The anchor values 4.9 and 7.1 are based on preliminary research by Boerkamp (2019) in which the influence of bias caused by anchoring was investigated.

Anchoring is an example of a heuristic that people use to make decisions (Kahneman, & Klein, 2009). Heuristics are quite helpful and effective when making a judgement or decision (Tversky & Kahneman, 1974). The following section describes how the anchor technique will be applied in the current research, in order to develop teachers' commitment to change.

Anchored Empowerment

Empowerment is part of sensemaking. The process of sensemaking during change is important for teachers to fully understand the change initiatives (Schmidt & Datnow, 2005). By understanding the change, teachers are more likely to support the change, which will contribute to the successful implementation of the change (Herscovitch & Meyer, 2002). Sensemaking is a process in which teachers interpret events and form their own understanding by placing these events within an existing framework or scheme (Heverin & Zach, 2012; Woodside, 2001). This is also supported by Schmidt and Datnow (2005), who explain that the process of sensemaking firstly involves interpretation of experiences and secondly establishing meaning. To illustrate, if the goals of a change are consistent with the beliefs and values of teachers, they will typically support the change. On the other hand, if the personal ideologies are in conflict with those of the change, resistance from the teachers will occur (Muncey & McQuillan, 1996). Consequently, within sensemaking, empowerment is a crucial factor for teachers that can help them to give meaning to the change in order to develop their commitment to change (by e.g., Ambad & Bahron, 2012; Hashmi & Naqvi, 2012; Mangundjaya, 2015).

Empowerment can be defined as the extent to which a teacher has the feeling that he/she can influence the way in which he/she implements the educational change (Van der

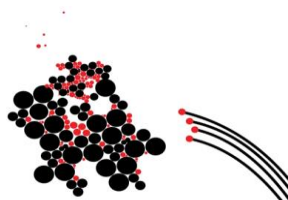


Valk, Grunefeld, & Pilot, 2011). For example, because teachers experience this feeling of empowerment, they feel more involved in making decisions concerning the change. As a result, teachers feel more identified with the change (Zhu, Sosik, Riggio, & Yang, 2012). The feeling of empowerment during change gives teachers the opportunity to evaluate the (perceived) beliefs and values of the change in such a way that their ideologies correspond to the goals of the change.

In short, feelings of empowerment can help teachers make sense of the educational change, which can positively affect their commitment to change (Schmidt & Datnow, 2005). This study will therefore use anchoring technique to try to make teachers feel more empowered. In this research anchoring on empowerment in order to develop teachers' commitment to change is called anchored empowerment.

Influence of Gender

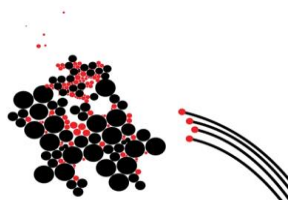
In addition to the importance of the influence of anchored empowerment on commitment to change, it is expected that effects can be observed of demographic variables (gender, job satisfaction) on the anchoring effect. This is expected because women are more sensitive to anchoring (Kudryavtsev & Cohen, 2011; Qian, Zafar, & Xie, 2009) and women are more open to be influenced than men (Eagly, 1978). Several explanations have been found for the gender difference. First, when a decision or a judgement has to be made, it turns out that women are more hesitant than men (Lebel & Lebel, 2018) and therefore it is expected that they rely more on proposed suggestions. Second, women are more precise and more analytical in terms of decision making in comparison to men (Safarani, Ahangar, & Fayaz-Bakhsh, 2018). Moreover, when processing information, women pay more attention to details than men (Downing, Chan, Downing, Kwong, & Lam, 2008; Lebel & Lebel, 2018; Safarani et al., 2018). Consequently, when women process more details (such as the inclusion of an anchor), it is expected that women more often utilize anchors. This is confirmed by the research of Qian, Zafar, and Xie, (2010), who show that women are more sensitive to bias. Third, men tend to think independently, while women are more likely to be cooperative and consider other people's ideas (Rajdev & Raninga, 2016). An explanation for this may be that women have, compared to men, lower self-confidence and therefore they are more likely to adapt to the suggestions of others (Eagly, 1978; Kleinjans, 2009). In summary, based on the findings of earlier studies related to anchoring, it can be assumed that women will be more easily manipulated by the anchoring technique than men.



Influence of Job Satisfaction

The level of job satisfaction can also have an impact on anchored empowerment and teachers' commitment to change. Previous research has shown that teachers who are more satisfied with their work are generally less sensitive to stimuli (Nguni, Sleegers, & Denessen, 2006). The reason for this is that satisfied teachers are more focused on tasks related to their work, therefore they are less likely to be influenced by stimuli, such as an anchor (Bettencourt, Brewer, Croak, & Miller, 1992). Consequently, if teachers with a higher level of job satisfaction are less sensitive to bias than teachers with a lower level of job satisfaction, then people with a lower level of job satisfaction are more likely to be influenced by an anchor. This is also supported by Hülsheger, Alberts, Feinholdt, and Lang (2013) and Posavac, Posavac and Posavac (1998). Based on these findings it can be assumed that teachers with a lower level of job satisfaction will be more manipulated by the anchor than teachers with a higher level of job satisfaction.

According to the above findings, the following research question has been developed: *To what extent does the use of an anchor on empowerment, influence the three dimensions of commitment to change (affective, continuance and normative) of teachers from secondary education, while checking the effect of how familiar the teachers are with these changes?* In order to answer the research question, this research uses an encouraging anchor (7.1) and a discouraging anchor (4.9) to manipulate teachers in their judgements about their commitment to change. When making a judgement, there is a tendency to adjust the judgement to the presented anchor (Englich, 2008; Tversky & Kahneman, 1974). This may mean that when an encouraging anchor is presented, teachers tend to make higher judgements regarding their commitment to change and vice versa. Consequently, it is expected that teachers of secondary education will be more committed to the educational change with an encouraging anchor on empowerment than teachers secondary education with a discouraging anchor (H1). Moreover, it is expected that female secondary educational teachers' commitment to change will be more influenced by the anchoring technique than male secondary educational teachers' commitment to change (H2). Finally it is expected that the commitment to change of teachers of secondary education with a higher level of job satisfaction will be less influenced by the anchoring effect than the commitment to change of teachers of secondary education with a lower level of job satisfaction (H3).



Method

Participants and Design

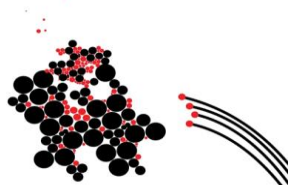
In the current study teachers of 23 Dutch secondary schools participated in the experiment. The teachers teach at the practical education level, VMBO, HAVO, VWO and/or gymnasium. The sample included 205 teachers. Data from participants who did not complete the entire questionnaire has been excluded. This resulted in a total of 193 participants (44.9% female, 48.3% male and 1% other). Teachers ranged in age from 22 to 65 years (M = 43.27 years, SD = 12.44). Participants' work experience in education ranged from 1 year to 43 years (M = 14.67 years, SD = 10.29). Table 1 provides an overview of other demographic variables of the participants.

Table 1

Demographic Variables in %

		N	%
Highest educational degree	Secondary vocational education	4	2.1
	University of applied science	98	50.8
	University of applied science – Master	30	15.5
	University	59	30.6
	Doctorate	2	1
Education grade[1]	First-grade	93	45.4
	Second-grade	100	48.8
Main subject	Mathematics	23	11.9
	English	20	10.4
	Dutch	20	10.4
	Geography	11	5.7
	Biology	11	5.7
	Sports	11	5.7
	Other	97	50.2

[1]In the Netherlands, secondary education is divided into two grades 'first-grade and 'second-grade'. The 'first-grade' represents the first two years of MBO and the first 3 years of HAVO and VWO. The 'second-grade' represents the latter years of high school (Rijksoverheid, n.d.).



A quasi-experimental with three groups was used: two experimental groups and one control group. The participants were randomly assigned by the computer to one of three groups: 71 teachers were assigned to the control condition, 67 to the experimental condition with an encouraging anchor and 55 to the experimental condition with a discouraging anchor. The three research groups all received an online questionnaire, in which only the manipulation question differed, depending on the anchor presented. Next to this, a counterbalancing design was used in order to avoid order bias (Brooks, 2012). Each research group was divided into two halves. The first half were allocated with the scenario of 21st century skills education and thereafter classroom differentiation. The second half was allocated to classroom differentiation and thereafter 21st century skills education. This resulted in six groups.

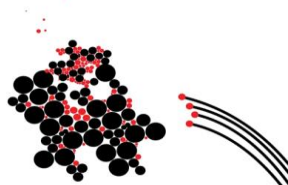
The three conditions (encouraging anchor, discouraging anchor, no anchor) were regarded as the independent variable. Commitment to change was regarded as the dependent variable. The variables gender, job satisfaction and familiarity (with the proposed changes) functioned as independent variables. The three independent variables were investigated with regard to the relation between anchored empowerment and commitment to change. As a side note, familiarity is considered in this research because teachers' familiarity with the proposed changes can influence the relationship between anchored empowerment and commitment to change. According to Verplanken and Orbell (2003), previous behaviour with satisfactory repetition might become a habit and thus be performed automatically in the future. Therefore the manipulation effect will be different between participants, considering that teachers which are familiar to change are likely to have formed a “habit” in this regard (Verplanken & Orbell, 2003).

Instruments and Data Analysis

The data for this study was collected via an online questionnaire (Qualtrics) which participants completed independently. The questionnaire consisted of five parts and was based on two educational change topics which are prevalent in recent educational research (by e.g., Saavedra & Opfer, 2012; Tomlinson & Moon, 2013): ‘21st century skills education’ and ‘differentiation in the classroom’.

Demographics. Firstly demographic data were collected, such as gender, age and number of years working as a teacher. In addition, one question is asked about the job satisfaction of the teachers on a scale ranging from one to ten.

Familiarity. Secondly, twelve questions were presented to the participant about their teaching habits in order to measure the variable teachers’ familiarity with the changes. The question were based on the Self-reported Habit index of Verplanken and Orbell (2003) and



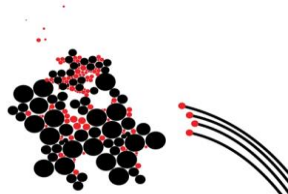
have been translated from English into Dutch. Example questions are: *'Stimulating my students' 21st century skills is something I often do'* and *'Differentiating between my students is something that typically belongs to me'*. Participants could answer by means of a likert-scale that ranged from *'fully disagree'* (1) to *'fully agree'* (5).

Scenario description. Thirdly, a scenario description was shown to the participants which contained information about the educational change topics that are used in the questionnaire.

Manipulation question. Fourthly, the manipulation question was given in order to influence the participants by means of anchoring. This part of the questionnaire, however, differed between the three groups. For the first experimental group, an encouraging anchor (7.1) was incorporated into the question and for the second experimental group a discouraging anchor (4.9) was incorporated. There was no anchor presented to the control group. In the manipulation question empowerment was incorporated. The manipulation question for the experimental group with a discouraging anchor was: *On the scale below, indicate the extent to which you influence the way in which you stimulate the 21st century skills of students, where 0 is not an influence at all and 10 is very influential. Consider whether the value is higher or lower than a 4.9.*

Commitment to change. The last part consisted of eighteen questions about commitment to change and measured participants' affective commitment to change (by e.g., '*I believe in the value of differentiating between my students'*) continuance commitment to change (by e.g., '*resisting the stimulation of the 21st century skills of my students is not a workable option for me'*) and normative commitment to change (by e.g., *'I feel a sense of duty to differentiate between my students'*). These questions are related to the two change topics used in the questionnaire. Participants could answer by means of a likert-scale that ranged from *'fully disagree'* (1) to *'fully agree'* (5). The questions were based on the commitment to change questionnaire of Herscovitch and Meyer (2002).

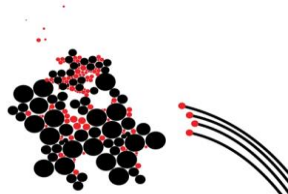
In order to verify whether the questionnaire was measuring the constructs as intended, two factor analyses, principal axis factoring with oblique rotation, were conducted. The first factor analysis (N =135) focused on the items that were concerned with 21st century skills. Five factors were extracted with Eigenvalues that were larger than 1. These five factors explained 68.80% of the variance. The second factor analysis (N =135) focused on the items that were concerned with differentiation. Six factors were extracted with Eigenvalues that were larger than 1. These six factors explain 70.20% of the variance. However, for both factor analyses it was expected that four factors would be extracted: one for familiarity with the



changes and three for commitment to change: affective, continuance and normative. All items for familiarity loaded on one construct for both 21st century skills and differentiation. However, the items of commitment to change with regard to 21st century skills, loaded on four constructs instead of three and the items with regard to differentiation, loaded on five constructs instead of three. Because more constructs were extracted than expected, a fixed factor analysis with four factors was conducted. The results of the fixed factor analysis for 21st century skills (Table 2) and differentiation (Table 3) can be found in Appendix A. As can be seen in Table 2 and Table 3, items that are concerned with familiarity questions load almost all on one factor. However, the items that relate to commitment to change are not clearly distinguishable. Despite this finding, the premeditation with the classification of the constructs has continued.

After completing the factor analysis, a Cronbach's Alpha for each of the factors was calculated in order to check the reliability of the questionnaire. The Cronbach's Alpha for the items regarding 21st century skills were: .95 (familiarity), .89 (affective commitment), .72 (continuance commitment), and .81 (normative commitment). The Cronbach's Alpha for the items regarding differentiation were: .96 (familiarity), .80 (affective commitment), .81 (continuance commitment) and .63 (normative commitment). The alpha values for familiarity and affective commitment for both scenarios and normative commitment for 21st century skills and continuance commitment for differentiation were considered as excellent (Gliem & Gliem, 2003). The alpha value for continuance commitment for 21st century skills was considered as good. However, the alpha value for normative commitment with regard to differentiation was considered as questionable (Gliem & Gliem, 2003). Item 27 created possible ambiguity. If item 27 is deleted, the Cronbach's Alpha will increase to .71. Despite normative commitment being assessed as questionable, the research continued with the existing items. Nevertheless, when interpreting the analysis, the questionable scale is considered.

Data analyses of the quantitative data were carried out with the help of SPSS. Before the analyses were carried out, it was examined whether the data complied with the assumptions of the tests. First the data were tested on normality. According to the Shapiro-Wilk test, in most cases the data were not normally distributed in each of the three groups. However, it has been decided to continue with the analysis under robust exceptions, because plots showed that the data were approximately normally distributed. Second, some outliers were detected according to the boxplot. Nevertheless it has been decided not to remove outliers from the data set because the dataset is small and removing outliers will lead to a

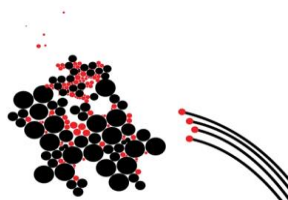


strong decrease in power (Bakker & Wicherts, 2014). Finally, the relations between 'affective commitment to change', 'continuance commitment to change', 'normative commitment to change' and 'familiarity' were roughly linear within the three conditions which means that the assumption of linearity was not violated. It can be concluded that the data generally complies with the assumptions required for valid analyses to be carried out.

Three analyses were carried out to answer the research questions. First, a manipulation check was carried out by means of a one-way ANOVA test. Second, a one-way MANCOVA test was performed to answer the research question. The effect of how familiar the teachers were with the change was considered. Finally, a two-way MANOVA test was performed twice to assess whether and to what extent gender and the level of job satisfaction influence the relationship between anchoring and commitment to change. SPSS only provides the p-values of all three dependent variables together. Therefore, after performing the two-way MANOVA, the p-values had to be manually corrected by dividing the values by three (Huizingh, 2014). Consequently, the p-values that were lower than .05/3 = .017 were assessed as significant.

Procedure

Prior to data collection, permission for conducting this research was requested at the ethics commission of the University of Twente. When permission was granted, teachers were invited by e-mail to participate in the research. They were asked to complete an online questionnaire consisting of five parts: (1) demographics, (2) familiarity, (3) scenario description, (4) manipulation question, (5) commitment to change. Parts 2 through 5 were offered to the participants twice, each time with a different scenario about an educational change: 21st century skills education and classroom differentiation. It took the teachers 15 minutes to complete the questionnaire. The teachers were randomly assigned by the computer to one of the six groups, who originate from three overarching groups: two experimental groups and one control group.



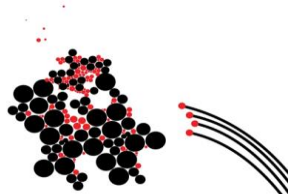
Results

The aim of this study was to investigate to what extent anchored empowerment affects teachers' commitment to change. In addition, the effect of gender and job satisfaction on the anchor effect was investigated. The Results section summarized the collected data and the performed analysis on the data. The data was collected between 21 May and 23 June, 2019.

Description Variables

First, the correlations between the study variables were presented in Table 4. The correlations between familiarity, affective commitment, continuance commitment and normative commitment were presented for both educational scenarios: 21st century skills education and classroom differentiation.

A positive significant correlation was found between affective commitment for 21st century skills and familiarity for 21st century skills, $r = .47$, $p < .001$. This means that, on average, a high score on affective commitment is accompanied with a high score on familiarity and vice versa. Another positive significant correlation was found between normative commitment for 21st century skills and familiarity for 21st century skills, $r = .43$, $p < .001$. In addition, on average, when someone scores high on familiarity for one of the scenarios, this individual will also score high on familiarity for the other scenario and vice versa, $r = .20$, $p = .037$. Furthermore, high scores on affective commitment for 21st century skills are, on average, accompanied with high scores on normative commitment for 21st century skills, $r = .68$, $p < .001$, and familiarity, $r = .21$, $p = .040$, affective commitment, $r = .50$, $p < .001$, and normative commitment, $r = .41$, $p < .001$, for differentiation. Other positive correlations were found between affective commitment for differentiation and normative commitment for 21st century skills, $r = .49$, $p < .001$, and familiarity for differentiation, $r = .34$, $p < .001$. This means that a high score on affective commitment for differentiation is accompanied with a high score on normative commitment for 21st century skills familiarity for differentiation. In addition, on average, one who scores high on continuance commitment for one of the scenarios will also score high on continuance commitment for the other scenario, $r = .60$, $p < .001$. Moreover, a high score on normative commitment for differentiation will accompanied with a high score on normative commitment for 21st century skills, $r = .54$, $p < .001$, and familiarity, $r = .21$, $p = .027$, affective commitment, $r = .54$, $p < .001$, and continuance commitment, $r = .31$, $p < .001$, for differentiation. Furthermore, a positive correlation was found between gender and affective commitment, $r = .26$, $p = .009$, and normative commitment, $r = .32$, $p < .001$, for 21st century skills. This means that women, on average, score higher on affective commitment and normative commitment. Finally, a



positive correlation was found between job satisfaction and the variables affective commitment, $r = .28$, $p = .005$, normative commitment, $r = .20$, $p = .046$, for 21st century skills and familiarity, $r = .22$, $p = .010$, and affective commitment, $r = .33$, $p < .001$, for differentiation. This means that, on average, high job satisfaction is accompanied by high scores on affective commitment, normative commitment for 21st century skills and familiarity and affective commitment for differentiation.

A significant negative correlation was found between continuance commitment for differentiation and familiarity, $r = -.20$, $p = .040$, and affective commitment, $r = -.33$, $p < .001$, for 21st century skills. This means that a low score on continuance commitment for differentiation is accompanied with a high score on affective commitment for 21st century skills and vice versa. Lastly, a negative correlation was found between job satisfaction and continuance commitment, $r = -.19$, $p = .049$, for differentiation. This means that, on average, less job satisfaction is accompanied by a high score on continuance commitment for differentiation and vice versa.

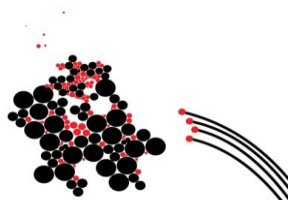


Table 4

Pearson Correlations and Descriptive Statistics of Study Variables

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
21st Century Skill Education	1. Familiarity	-										
	2. Affective Commitment to Change	**.47***	-									
	3. Continuance Commitment to Change	.04	-.19	-								
	4. Normative Commitment to Change	**.43***	**.68***	.19	-							
Classroom Differentiation	5. Familiarity	**.20***	**.21***	-.02	.20	-						
	6. Affective Commitment to Change	.18	**.50***	-.17	**.49***	**.34***	-					
	7. Continuance Commitment to Change	**-.20***	**-.33***	**.60***	-.03	-.12	-.10	-				
	8. Normative Commitment to Change	.12	**.41***	.12	**.54***	**.21***	**.54***	**.31***	-			
Demographics	9. Gender	.16	**.26***	.02	**.32***	-.05	.05	-.12	.04	-		
	10. Job Satisfaction	.11	**.28***	-.03	**.20***	**.22***	**.33***	**-.19***	.06	.02	-	
Condition	11. Manipulation Question	.02	.04	.05	-.02	.02	.03	-.09	-.02	-.04	-.08	-
	Mean	4.75	3.88	2.53	3.35	3.49	4.10	2.51	3.44	1.53	7.70	1.92
	SD	1.34	.80	.65	.80	.87	.60	.79	.65	.52	.87	.81

* $p < .05$ (2-tailed)

Note: Significant correlations are shown in boldface.

Manipulation Check

In order to check whether the manipulation questions lead to the expected result, a one-way between groups ANOVA test was repeated twice. The first ANOVA test (N = 121) focused on the manipulation question regarding the proposed change '21st century skills' and the second (N = 128) regarding the proposed change 'differentiation'.

21st century skills education. Levene's test showed that the assumption of equal variances was not met, $F(2, 118) = 3.20$, $p = .044$. No significant effect was found by ANOVA, $F(2, 118) = .64$, $p = .531$. This means that the presented anchors did not have an effect in each condition on the value given to the proposed change. The manipulation did not have the expected result.

Classroom differentiation. Levene's test was non-significant, $F(2, 125) = .09$, $p = .918$, which means that the assumption of equal variances was met. No significance evidence was found from the ANOVA test that the manipulation worked as intended, $F(2, 125) = 1.44$, $p = .241$.

Taken together, the manipulation question did not have the expected result for the scenario of 21st century skills education and the scenario of classroom differentiation in each condition.

Anchored Empowerment and Commitment to Change

A one-way MANCOVA test was carried out to determine to what extent anchored empowerment affects teachers' affective, continuance and normative commitment to change, while controlling for familiarity. For each scenario the analysis was performed: 21st century skills education (N = 101) and classroom differentiation (N = 111).

21st century skills education. Box's M Test was significant ($p = .012$) which means that the assumption of homogeneity of variances and covariances was violated. Because this assumption was not met, Pillai's Trace was used to continue. The one-way MANCOVA test showed a non-significant effect between the manipulation variable (anchor) and the combined depended variables (affective commitment, continuance commitment, normative commitment) when controlling for familiarity with the changes, $F(2, 98) = .29$, $p = .888$, partial $\eta^2 = .01$. Moreover, no significant effect was found between the presented anchor and the individual dependent variables (see Table 5). This means that there is for 21st century skills education, on average, no effect between an encouraging anchor or a discouraging anchor on teachers' affective, continuance and normative commitment to change, while checking for familiarity.

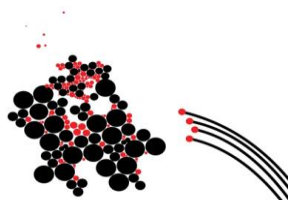


Table 5

Summary of Multivariate Analyses of Commitment to Change for 21st Century Skills

Predictor	Dependent variable	*F*	*p*	Partial η^2
Condition	Affective commitment to change	.50	.608	.01
	Continuance commitment to change	.17	.842	.00
	Normative commitment to change	.32	.728	.01

Note: The results have been evaluated with the variable 'familiarity'.

Classroom differentiation. Box's M Test was non-significant (p = .995) which means that the assumption of homogeneity of variances and covariances was not violated. Because this assumption was met, Wilks' Lambda was used to continue with the analysis. The one-way MANCOVA test showed a non-significant effect between the manipulation variable (anchor) on the combined depended variables (affective commitment, continuance commitment, normative commitment) when controlling for familiarity with the changes, $F(2, 108) = .78$, $p = .584$, partial $\eta^2 = .02$. In addition, no significant effect was found between the presented anchor and the individual dependent variables (see Table 6). This means that for classroom differentiation, there is, on average, no effect between an encouraging anchor or a discouraging anchor on teachers' affective, continuance and normative commitment to change, while checking for familiarity.

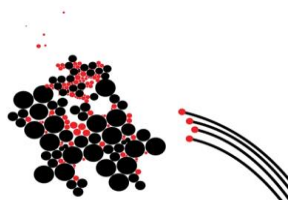
Table 6

Summary of Multivariate Analyses of Commitment to Change for Differentiation

Predictor	Dependent variable	*F*	*p*	Partial η^2
Condition	Affective commitment to change	1.15	.322	.02
	Continuance commitment to change	.37	.693	.01
	Normative commitment to change	.04	.959	.00

Note: The results have been evaluated with the variable 'familiarity'.

Taken together, the results show that anchored empowerment, on average, does not affect teachers' affective, continuance and normative commitment to change with regard to 21st century skills education and classroom differentiation.



Influence of Gender

A two-way MANOVA test was performed to investigate whether there was a difference in the influence of the anchoring between male and female secondary school teachers' commitment to change (affective, continuance and normative). This analysis was performed for each scenario: 21st century skills education (N = 101) and classroom differentiation (N = 111).

21st century skills education. Levene's Test was non-significant for continuance commitment, $F(5, 95) = 1.05$, $p = .396$. In addition, Levene's Test was non-significant for normative commitment, $F(5, 95) = .47$, $p = .798$. This indicates that these two dependent variables were equal across the groups. However, Levene's Test was significant for affective commitment, $F(5, 95) = 2.35$, $p = .047$. This means that affective commitment was not equal across the groups, thus for affective commitment this assumption was violated. Box's M Test was non-significant ($p = .053$) which means that the assumption of homogeneity of covariances was not violated. Because this assumption was met, Wilks' Lambda was used to continue. As determined by the two-way MANOVA test, no effect was found between the interaction variable (*gender x condition*) and the dependent variables, $F(5, 95) = 1.35$, $p = .237$, partial $\eta^2 = .04$. Moreover, no effect was found for the interaction variable on the individual dependent variables (see Table 7).

In short, the results indicate that there was on average no difference in the influence of anchoring between male and female teachers' commitment to change, for the scenario of 21st century skills.

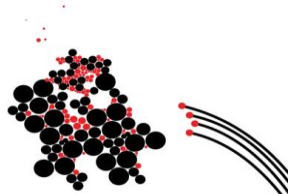


Table 7

Summary of Multivariate Analyses of Commitment to Change for 21st Century Skills

Predictor	Dependent variable	*F*	*p*	Partial η^2
Gender *	Affective commitment to change	.22	.802	.01
Condition	Continuance commitment to change	1.14	.324	.02
	Normative commitment to change	3.18	.046	.06
Gender	Affective commitment to change	7.51	**.007**	.07
	Continuance commitment to change	.01	.744	.00
	Normative commitment to change	12.14	**.001**	.11
Condition	Affective commitment to change	.76	.472	.02
	Continuance commitment to change	.20	.822	.00
	Normative commitment to change	.62	.541	.01

Note: The given p-values still need to be corrected because there are three dependent variables. This means that the p-value should be lower than 0.05/3=0.0167 in order to assume a significant effect. Significant correlations are shown in boldface.

Classroom differentiation. Levene's Test was non-significant for affective commitment, $F(5, 105) = .42$, $p = .832$, continuance commitment, $F(5, 105) = .64$, $p = .671$, and normative commitment, $F(5, 105) = 1.12$, $p = .354$. This indicates that the dependent variables were equal across the groups and thus this assumption was met. Box's M Test was non-significant (p = .923) which means that the assumption of homogeneity of variances was not violated. According to the two-way MANOVA test, there was no effect found for the interaction variable (*gender x condition*) on the combined dependent variables, $F(5, 105) = .49$, $p = .815$, partial $\eta^2 = .01$. Furthermore, no effect was found for the interaction variable on the individual dependent variables (see Table 8). These results indicate that there was no difference found in the influence of the anchoring between male and female teachers' commitment to change, for the scenario of differentiation.

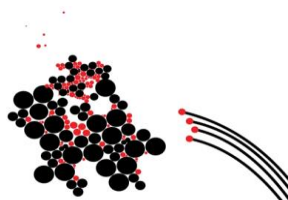


Table 8

Summary of Multivariate Analyses of Commitment to Change for Differentiation

Predictor	Dependent variable	*F*	*p*	Partial η^2
Gender *	Affective commitment to change	.04	.963	.00
Condition	Continuance commitment to change	.05	.955	.00
	Normative commitment to change	.70	.498	.01
Gender	Affective commitment to change	.30	.586	.00
	Continuance commitment to change	2.04	.156	.02
	Normative commitment to change	.18	.674	.00
Condition	Affective commitment to change	1.94	.149	.04
	Continuance commitment to change	.61	.543	.01
	Normative commitment to change	.03	.968	.00

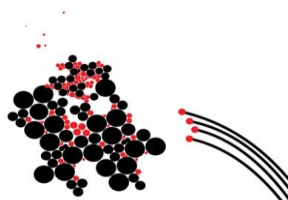
Note: The given p-values still need to be corrected because there are three dependent variables. This means that the p-value should be lower than 0.05/3=0.0167 in order to assume a significant effect. Significant correlations are shown in boldface.

Taken together, on average, for both scenarios, 21st century skills education and classroom differentiation, there is no difference in the influence of anchoring between male and female teachers' commitment to change.

Influence of Job Satisfaction

Another two-way MANOVA test was carried out to investigate the influence of anchoring between dissatisfied and more satisfied teachers' commitment to change (affective, continuous, normative). First a MANOVA test was executed with regard to the scenario for 21st century skills (N = 101) and thereafter for the scenario with regard to differentiation (N = 111).

21st century skills education. Levene's Test was non-significant for continuance commitment, $F(10, 80) = 1.48$, $p = .161$. In addition, Levene's Test was non-significant for normative commitment, $F(10, 80) = 1.20$, $p = .307$. This indicates that these dependent variables were equal across the groups and thus this assumption was met. However, Levene's Test was significant for affective commitment, $F(10, 80) = 3.39$, $p = .001$. This means that the assumption of equal variances was not met for affective commitment. In addition, Box's M Test was significant ($p = .014$) which means that the assumption of homogeneity of variances was violated. However, a continuance of the analysis was possible, considering that the group sizes exceeded thirty participants. According to the two-way MANOVA test, there was no



effect found for the interaction variable (*job satisfaction x condition*) on the combined dependent variables, $F(10, 80) = .89$, $p = .628$, partial $\eta^2 = .09$. Furthermore, no effect was found for the interaction variable on the individual dependent variables (see Table 9). These results indicate that there was no difference found in the influence of the anchoring between dissatisfied and more satisfied teachers' commitment to change for the scenario 21st century skills.

Table 9

Summary of Multivariate Analyses of Commitment to Change for 21st Century Skills

Predictor	Dependent variable	*F*	*p*	Partial η^2
Job Satisfaction	Affective commitment to change	.69	.72	.07
* Condition	Continuance commitment to change	1.14	.347	.13
	Normative commitment to change	.543	.839	.06
Job Satisfaction	Affective commitment to change	1.09	.379	.11
	Continuance commitment to change	.67	.736	.07
	Normative commitment to change	.44	.911	.05
Condition	Affective commitment to change	.77	.467	.02
	Continuance commitment to change	.84	.435	.02
	Normative commitment to change	.37	.693	.01

Note: The given p-values still need to be corrected because there are three dependent variables. This means that the p-value should be lower than 0.05/3=0.0167 in order to assume a significant effect. Significant correlations are shown in boldface.

Classroom differentiation. Levene's Test was non-significant for affective commitment, $F(11, 89) = 1.38$, $p = .198$, continuance commitment, $F(11, 89) = 1.48$, $p = .154$, and normative commitment, $F(11, 89) = .39$, $p = .959$. This indicates that the dependent variables were equal across the groups and thus this assumption was met. Box's M Test was non-significant ($p = .988$) which means that the assumption of homogeneity of variances was not violated. According to the two-way MANOVA test, there was no effect found for the interaction variable (*job satisfaction x condition*) on the combined dependent variables, $F(11, 89) = .61$, $p = .936$, partial $\eta^2 = .06$. In addition, no effect was found for the interaction variable on the individual dependent variables (see Table 10). These results indicate that there was no difference found in the influence of the anchoring between dissatisfied, average satisfied and satisfied teachers' commitment to change for the scenario differentiation.

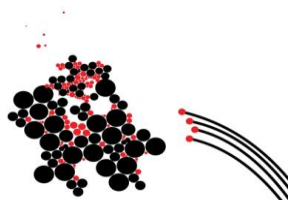


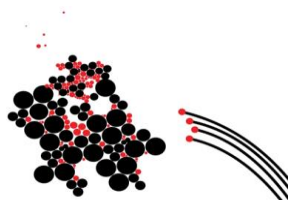
Table 10

Summary of Multivariate Analyses of Commitment to Change for Differentiation

Predictor	Dependent variable	*F*	*p*	Partial η^2
Job Satisfaction	Affective commitment to change	.55	.832	.05
* Condition	Continuance commitment to change	.53	.852	.05
	Normative commitment to change	.31	.970	.03
Job Satisfaction	Affective commitment to change	3.29	**.001**	.27
	Continuance commitment to change	1.52	.145	.15
	Normative commitment to change	1.55	.136	.15
Condition	Affective commitment to change	1.11	.336	.02
	Continuance commitment to change	.11	.900	.00
	Normative commitment to change	.15	.858	.00

Note: The given p-values still need to be corrected because there are three dependent variables. This means that the p-value should be lower than 0.05/3=0.0167 in order to assume a significant effect. Significant correlations are shown in boldface.

Taken together, on average, there is no difference in the influence of anchoring between dissatisfied and more satisfied teachers' commitment to change.



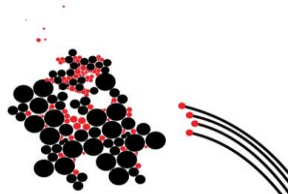
Summary

An overview of the results per hypotheses is shown in Table 11.

Table 11

Summary of Status of Hypotheses per Scenario

Hypotheses	Scenario	Condition	Status
H1: The expectation is that secondary education teachers will be more committed to the organisational change with an encouraging anchor on empowerment than secondary education teachers with a discouraging anchor.	21st century skills education	Control vs. encouraging anchor	Rejected
		Control vs. discouraging anchor	Rejected
		Encouraging anchor vs. discouraging anchor	Rejected
	Classroom differentiation	Control vs. encouraging anchor	Rejected
		Control vs. discouraging anchor	Rejected
		Encouraging anchor vs. discouraging anchor	Rejected
H2: The expectation is that female secondary education teachers' commitment to change will be more influenced by the anchoring technique than male secondary education teachers' commitment to change.	21st century skills education	Control	Rejected
		Encouraging anchor	Rejected
		Discouraging anchor	Rejected
	Classroom differentiation	Control	Rejected
		Encouraging anchor	Rejected
		Discouraging anchor	Rejected
H3: The expectation is that the commitment to change of secondary education teachers with a higher level of job satisfaction will be less influenced by the anchoring effect than the commitment to change of teachers of secondary education with a lower level of job satisfaction.	21st century skills education	Control	Rejected
		Encouraging anchor	Rejected
		Discouraging anchor	Rejected
	Classroom Differentiation	Control	Rejected
		Encouraging anchor	Rejected
		Discouraging anchor	Rejected



Discussion

This experimental study has examined the extent to which the use of an anchor on empowerment influences the three dimensions of commitment to change (affective, continuance and normative) of teachers from secondary education. It was expected that teachers from secondary education would be more committed to the educational change with an encouraging anchor on empowerment than teachers with a discouraging anchor. In addition, it was expected that female teachers' commitment to change will be more likely to be influenced by the anchoring technique than male teachers' commitment to change. In line with the third hypothesis, it was expected that the commitment to change of teachers from secondary education with a higher level of job satisfaction will be more likely to be influenced by the anchoring effect than the commitment to change of teachers with a lower level of job satisfaction.

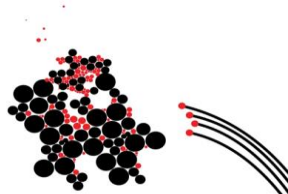
The Quality of The Manipulation

The results of the current study show that anchored empowerment has no influence, for both educational change scenarios, on the affective, continuance and normative commitment to change of teachers. Teachers' answers to the manipulation question did not differ in the three conditions with either a discouraging anchor, an encouraging anchor or no anchor. This is in contrast with the findings of Tversky and Kahneman (1974), who found that people tend to adjust their judgement according to the direction of a numerical anchor.

This unexpected result can be explained by the study of Wegener et al. (2001), who suggest that the anchor value may not be extreme enough. The value is extreme if it is outside the range of plausible values. According to Wegener et al. (2001), the given value in the current experiment is moderate low (4.9) and moderate high (7.1). Extreme low or high anchors lead to extremely low or high ratings.

Furthermore, compared to other studies, the range of plausible values is limited in the current study (Wegener, Petty, Blankenship, & Detweiler-Bedell, 2010). As an example, other studies mainly ask for an estimate in age, percentage, degrees or length where the range is greater than 10 (Furnham & Boo, 2011). A consequence of a smaller range is that the discouraging anchor and the encouraging anchor are closer together. Therefore, there is a smaller difference or no difference in the anchoring effect between groups that are provided with an encouraging anchor or a discouraging anchor (Wegener et al., 2010).

Alternatively, it could be that some participants have been too personally involved in the proposed change due to the anchoring technique. Literature indicates that in decision making, the lower the relevance or personal involvement with the change, the stronger the



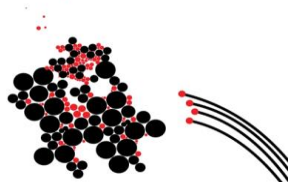
anchoring effects are (Van Exel, Brouwer, van den Berg, & Koopmanschap, 2006). Despite the fact that familiarity with the changes has been taken into account in the current study, the proposed educational changes are strongly related to the work of the participants. Moreover, participants' thoughts about the educational changes were intended be influenced by means of the manipulation question. The manipulation question was set up in such a way that the participants had the feeling of being empowered or not, to implement the change. Hence, the anchor has a high relevance for the participants and concerns personal involvement.

The Value of Gender

The results of this experimental study indicate that, for both educational change scenarios, there is no difference between males and females in influencing their commitment to change by the anchoring technique. This is in contrast with the second hypothesis which stated that female teachers' commitment to change would be more likely to be influenced by anchoring than male teachers' commitment to change. This hypothesis was based on the findings of earlier studies, which stated that women are more sensitive to bias, have more attention to details such as an anchor and are more likely to be influenced (by e.g., Downing et al., 2008; Qian et al., 2009).

The contradictory findings in the current study can be explained by the study of Roberts (1991). Roberts (1991) concluded that there is very little evidence that there is a difference between male and female when it comes to influence either sex. Specifically, with regard to persuasion and conformity. In an experimental study it was found that women are only more influenceable than men in group situations with supervision of an influencing agent (Eagly & Carli, 1981). This may indicate that, in the present study, women are just as resistant to adjusting their judgement based on an anchor as men. Moreover, Roberts (1991) concluded that women are more willing than men to confirm their judgements suggested by others in order to appear agreeable. However, women may not necessarily reflect any real change in their views (Roberts, 1991).

Second, according to a study by Bergman, Ellingsen, Johannesson and Svensson (2010), the anchoring effect decreases with a higher cognitive ability. This means that people with higher cognitive abilities, are less sensitive for anchors than people with lower cognitive abilities. Oechssler, Roider and Schmitz (2009) explained that participants with a higher cognitive ability might understand the psychology behind the questionnaire. Therefore, participants can be aware of the presented anchor and do not consider the presented anchor in making their judgement. In line with this reasoning, it can be expected that teachers with a lower cognitive ability are easier to influence than teachers with a higher cognitive ability. In



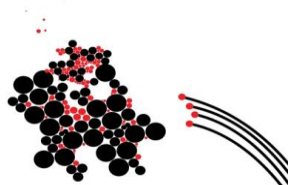
the current study, of all male and female teachers, approximately 98% have at least an University of applied science degree. Therefore, it can be assumed that the participants from the current study have an above-average cognitive level (Hooghe, Marien, & de Vroome, 2012). This may indicate that female teachers in this experimental study are less sensitive to the presented anchor than previously suggested. As a result, cognitive ability may act as a mediator between job satisfaction and the anchoring effect.

The Value of Job Satisfaction

No difference was found in the current study in influencing teachers' commitment to change between teachers with a higher level of job satisfaction and teachers with a lower level of job satisfaction for both educational change scenarios. However, several studies have found that teachers who are satisfied with their work are less sensitive to the anchoring effect than dissatisfied teachers (by e.g., Hülsheger et al., 2013;Nguni et al., 2006). Explanations have been found for the result of the current study, which contradicts the findings of previous studies.

One possible explanation may be that less satisfied teachers are more likely to be influenced by an extreme anchor, whose value exceeds the plausible values, than an average anchor (Wegener et al., 2010). The commitment to change of more satisfied teachers can therefore still be less influenced by the anchor than less satisfied teachers. However, further research should find an anchoring effect by improving the anchor.

Second, in the current experiment teachers rate their job satisfaction with an average of 7.7 on a scale of 10 (10 having the most job satisfaction). As a result, the average job satisfaction is relatively high which means that the results of dissatisfied and satisfied teachers' commitment to change cannot be compared adequately. However, the high level of teachers' job satisfaction in this study contrasts with the statistics presented by Centraal Bureau voor de Statistiek [CBS] (2018). In recent years, the number of teachers striking in education in the Netherlands has increased. The reasons for these strikes had to do with teachers' job satisfaction. Most of the strikes were about dissatisfaction with teachers' high workload and their salary (CBS, 2018). However, the high level of job satisfaction in this study may be related to the sampling method used. By means of convenience sampling, teachers can decide for themselves whether or not they want to participate in the experiment (Etikan, Musa, & Alkassim, 2016). The current survey was carried out during a demanding end-of-year period for the teachers. This means that there is a significant chance that only teachers with a lower workload decided to participate in the experiment because they have more time to participate. Teachers with a lower workload are more satisfied with their work



than teachers with a higher workload (Butt, & Lance, 2005). As a result, the relatively high level of job satisfaction can be explained by the possibility of more teachers taking part with a lower workload and thus higher job satisfaction than teachers with a higher workload and lower job satisfaction.

Theoretical Implications

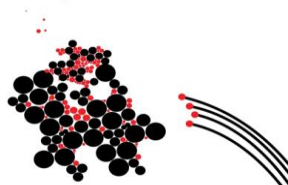
The present study provides a new perspective to the field of educational science which makes the results an insightful starting point for further research. At the moment, several studies have been carried out in relation to the effects of anchoring (by e.g., Tversky & Kahneman, 1974), how to increase teachers' commitment to change (by e.g., Bowe et al., 2003; Herscovitch & Meyer, 2002) and the relationship between empowerment and commitment to change (by e.g., Ambad & Bahron, 2012, Hashmi & Naqvi, 2012). However, the present study combined anchoring and empowerment to increase teachers' commitment to change as a manipulation technique. Despite the fact that previous studies gave grounds to expect significant effects, the current study has shown that anchored empowerment does not affect teachers' commitment to change.

For the scientific community, these findings implicate that the combination of anchored empowerment does not directly influence teachers' commitment to change. The results of previous studies could not be generalised to the context of the current study. As a result, research into this way of manipulating in order to develop the commitment to change of teachers is no longer a priority. To elaborate, the current study shows that anchoring does not work as expected when the extent of influence is requested to estimate. Moreover, this type of anchoring, where the extent of influence is requested to estimate, is not common in the current literature (Furnham & Boo, 2011). Therefore the current results provide a new perspective in existing science.

Practical Implications

The findings of this study suggest that influence effects, created by the anchor, are more complex than what Kahneman and Klein (2009) implies. As such, there is currently little reason to assume that Dutch teachers can be unconsciously influenced by this specific technique, when aspiring to facilitate the development of teachers’ commitment to change.

Further research should improve the anchoring technique or utilize alternative influencing techniques in order to influence teachers’ commitment to change. Therefore, schools should currently prioritize existing, reliable and valid techniques. For example the school board should effectively manage the psychological transition of employees by understanding their behaviour (Yılmaz, & Kılıçoğlu, 2013). In addition, schools could create



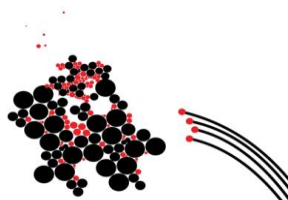
more effective learning environments, addressing the educational needs, generating knowledge, skills, attitudes and organizational strategy to prepare individuals for change (Vakola & Nikolaou, 2005; Yılmaz, & Kılıçoğlu, 2013). Finally, information about the change initiatives should be shared regularly with the teachers before and during the change in order to enhance teachers' commitment to change (Gardner, Wright, & Moynihan, 2011).

Limitations

The present study had a few limitations. The first limitation is that the anchor presented was not extreme enough, which may be the reason why no anchoring effect was found (Wegener et al., 2001). In line with this finding, the provided anchor was lacking in terms of the plausible range of values, which ranged from one to ten (Wegener et al., 2010). Moreover, according to the meta-analysis of Furnham and Boo (2011), a limited range of values where the extent of influence is requested to estimate is not common. More common are ranges in age (Blankenship et al., 2008), weight (Wegener et al., 2001), temperature (Epley & Gilovich, 2001), percentage (Tversky & Kahneman, 1974) and similar continuous variables. This might indicate that further research should search for a proven significant method to measure the anchoring effect.

Second, empowerment is more extensively defined in most studies than in the current one. In most definitions, empowerment consists of more than one construct. A proper definition of empowerment is essential to ensure validity (Drost, 2011). Menon (2001) was one of the first researchers who investigated the various definitions and perspectives of empowerment. He created a more comprehensive definition. Menon (2001) defined empowerment at the individual level as an employee who perceives control over their work and work context, who perceives personal competence to do their work and who is personally energised by the goals of the organisation. In this definition, three psychological dimensions are interwoven: perceived control, perceived competence and goal internalisation. The present study has been limited to perceived control. The dimensions perceived competence and goal internalisation have been omitted and therefore empowerment was incomplete and not validly measured in line with the definition of Menon (2001).

Third, despite the reliability of the questionnaire being assessed as sufficient, the factor analysis (Appendix A) shows that the convergent and discriminant validity for affective, continuance and normative commitment to change was assessed as insufficient. This means that there is a possibility that the questionnaire did not entirely measure what it was intended to measure (Drost, 2011). Therefore, it might be that the current study could not confirm whether anchoring influence teachers' commitment to change.

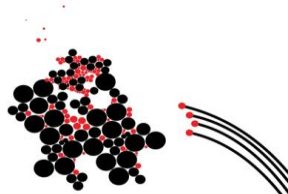


Fourth, job satisfaction was measured on the basis of one item in order to avoid tiring the participant with too many questions. However, research shows that teachers' job satisfaction regarded as a concept which is more complex (Liu & Ramsey, 2008). Hence, job satisfaction should be measured with more than one item. Liu and Ramsey (2008) developed a questionnaire to measure teachers' job satisfaction. The questionnaire consist of 25 items related to seven constructs: school administration, student interaction, professional development, safety, work conditions, resources and compensation. This indicates that job satisfaction has not been tested extensively enough in the current research. As a result, the validity of job satisfaction is insufficient (Drost, 2011).

Finally, because of time constraints, convenience sampling was chosen. This means that participants were selected on the basis of their accessibility and willingness to participate (Etikan, et al., 2016). A disadvantage of this method is that participants have chosen themselves for the study. For example only participants have applied who were personally interested in the topic of this study or who have a lower workload and thus time to participate. This means that teachers with a different interest or a higher workload have excluded themselves from participation. As a result, a sample based on accessibility is not a proper method because it is not certain that the elements of the sample give a complete insight of the total population (Etikan et al., 2016).

Suggestions for Further research

It is recommended that further research investigates alternative angles for influencing the development of teachers' commitment to change. As an example, the effect of priming on teachers' commitment can be investigated. Priming is also a way of unconsciously influencing people's thoughts and beliefs (Tulving & Schacter, 1990). In contrast with anchoring, people are primed by perceptual identification with words and objects. As an example people's political preferences can be influenced by what is presented in the media. Images, blogs or advertisements can have an impact on people's judgments or behaviours (Roskos-Ewoldsen, & Roskos-Ewoldsen, & Dillman Carpentier, 2009). In addition, research shows that the addition of an image to text increases the priming effects (Sabbane, Bellavance, & Chebat, 2009). As a result, further research can investigate the effect of text and image posters on teachers' commitment. In order to influence teachers with the information shown on the poster, they should be regularly exposed to the poster which serves as the manipulation (Tulving & Schacter, 1990). As an example, teachers can be exposed to the posters in the teachers' meeting room (Tagliaro & Ciaramella, 2016). As a result, teachers will be primed by the posters at any time in the meeting room.



Second, the scientific community should prioritize other, more effective ways to develop teachers' commitment to change. This is important considering that many educational changes do not achieve the desired results. As an example, science could focus on countering teachers' resistance to change (Erwin & Garman, 2010; Knight, 2009). Resistance to change is considered as one of the most common reasons why change programs have unsatisfactory results (by e.g., Oreg, 2003). Resistance from teachers often occurs because teachers believe the change is not worth their time, effort and attention (Yilmaz & Kılıçoğlu, 2013). A common cause of resistance to change is that employees are not involved in the change and that they are afraid of losing control in their work. A new study could perhaps be carried out into the unconscious influence of teachers on their resistance.

On the other hand, the results of the present study does not necessarily mean that the hypotheses based on earlier studies can be refuted, but rather that it is necessary to consider how the current study, which was a first attempt to test the hypotheses, can be improved. Hence, the following suggestions have been developed to improve the current research.

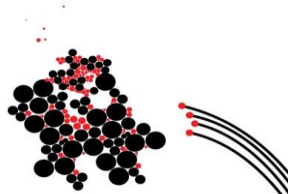
It is recommended that further research should first develop a sophisticated definition of empowerment. Further research should maintain Menon's (2001) definition which is based on the three dimensions: perceived control, perceived competence and goal internalisation. The definition should be incorporated into the manipulation question.

Second, further research should make the value of the anchor more extreme in order to increase the anchorage effects. The value is extreme if it lies outside the range of plausible values (Wegener et al., 2001). Further research should investigate on a scientific basis which value should be used and how it and how it should be incorporated into the manipulation question.

Third, according to Wegener et al. (2010), the range of possible answers have to be increased, for example by asking for a percentage instead of offering a rating scale ranging from one to ten.

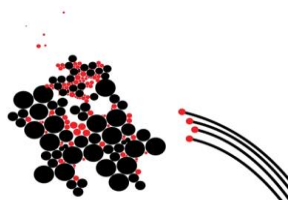
Fourth, in order to increase the validity of the questionnaire, it is recommended that further research critically examines the current questionnaire on the basis of the factor analysis (Appendix A) and adjusts the new questionnaire accordingly.

Fifth, in order to get a more complete and valid insight into the job satisfaction of the participants, it is suggested to measure job satisfaction with more items and perhaps additional constructs (Drost, 2011). It is suggested to base the extension of the questionnaire on the one developed by Liu and Ramsey (2008). They developed a reliable and valid questionnaire to measure teachers' job satisfaction.



Finally, if further research, for example due to time constraints, again opts for convenience sampling, it is advised to increase the chance of diversity within the sample (Etikan et al., 2016). In order to ensure that more different teachers take part in the survey, further research should set out the survey in a less demanding school period for the teachers than the period of the current survey. Schools advised the author of this paper to start further research after the summer holidays, in the first half of a school year. Hence, not in a period when teachers are working on organising final exams and completing a school year. Many schools and teachers indicated that they did not want to and could not participate in the present research because of other tasks.

As a concluding remark, the present study was a first attempt to investigate the relationship between anchored empowerment and teachers' commitment to change. Despite the results of the current study, I strongly recommend on the basis of previous studies to conduct further research, with the help of the provided suggestions for further research. Future work is required to better understand unconscious decision-making strategies for teachers to increase their commitment to change, in order to facilitate meaningful educational change.



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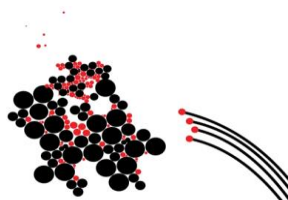

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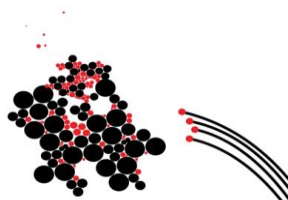

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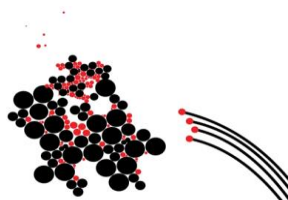

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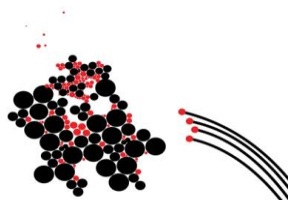

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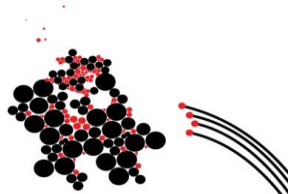

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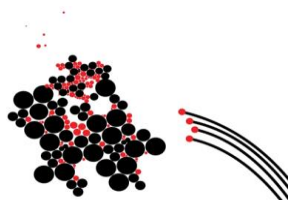

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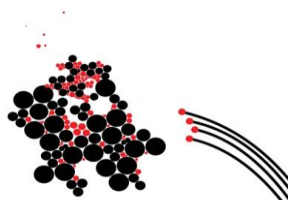

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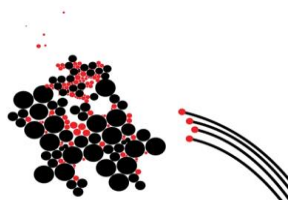
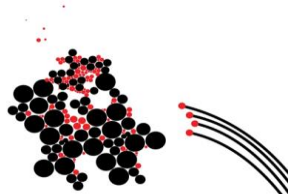


Appendix A

Table 2
Factor Analysis Concerning 21st Century Skills items

Item	Factor 1	2	3	4
Familiarity items				
1. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is iets wat ik vaak doe.	**.74**	-.17	-.08	.03
2. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is iets wat ik automatisch doe.	**.90**	-.06	.02	-.04
3. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is iets wat ik doe zonder dat ik mezelf daaraan hoef te herinneren.	**.91**	-.05	.08	-.10
4. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is iets waarvan ik het raar zou vinden als ik het niet zou doen.	**.54**	-.20	-.03	.09
5. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is iets wat ik zonder nadenken doe.	**.83**	-.00	.11	-.06
6. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is iets wat me moeite zou kosten om niet te doen.	**.63**	.02	-.03	.35
7. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is iets wat hoort bij mijn dagelijkse routines.	**.84**	.04	-.10	.08
8. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is iets wat ik al doe nog voordat ik me realiseer dat ik het doe.	**.80**	.05	.10	-.07
9. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is iets waarvan ik het moeilijk zou vinden om het niet te doen.	**.75**	-.05	-.09	.05
10. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is iets waarover ik niet hoef na te denken of ik het moet doen.	**.90**	.09	-.05	-.08
11. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is iets wat typisch bij mij hoort.	**.76**	-.19	.03	-.02

12. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is iets wat ik al lange tijd doe.	**.84**	.03	-.10	.05
Affective Commitment items				
13. Ik geloof in de waarde van het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen.	.16	**-.85**	.02	-.14
14. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is een goede strategie voor onze school.	.08	**-.89**	.10	-.05
15. Ik denk dat onze directie een fout begaat door de 21ste eeuwse vaardigheden van mijn leerlingen te willen stimuleren. (R)	.03	**-.69**	-.35	-.11
16. Het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen dient een belangrijk doel.	.08	**-.82**	.12	-.03
17. Dingen zouden beter gaan als ik de 21ste eeuwse vaardigheden van mijn leerlingen niet stimuleer. (R)	.05	**-.41**	**-.43**	.05
18. Het is niet nodig om de 21ste eeuwse vaardigheden van mijn leerlingen te stimuleren. (R)	.01	**-.62**	-.39	.00
Continuance Commitment items				
19. Ik heb geen keus: ik moet meegaan in het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen	-.12	-.14	.25	.37
20. Ik voel druk om mee te gaan in het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen.	-.12	.09	**.52**	.12
21. Er staat voor mij te veel op het spel om weerstand te bieden tegen het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen.	-.03	-.12	**.71**	.08
22. Het zou mij te veel kosten om weerstand te bieden tegen het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen.	-.01	-.09	**.66**	.10
23. Het zou risicovol zijn om mij uit te spreken tegen het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen	.02	.05	**.67**	-.01
24. Weerstand bieden tegen het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen is geen werkbare optie voor mij.	.20	.17	.11	**.68**
Normative Commitment items				
25. Ik voel een plichtsbesef om te werken aan het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen.	.17	**-.41**	.16	**.40**



26. Ik denk dat het niet goed van mij zou zijn als ik me verzet tegen het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen.	.07	**-.49**	.13	**.49**
27. Ik zou me niet slecht voelen als ik me verzet tegen het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen. (R)	-.21	-.16	**-.51**	**.45**
28. Het zou onverantwoordelijk van mij zijn als ik weerstand bied tegen het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen.	.10	**-.55**	.10	.34
29. Ik zou me schuldig voelen als ik me verzet tegen het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen.	.14	-.37	.11	.26
30. Ik voel geen enkele verplichting om het stimuleren van de 21ste eeuwse vaardigheden van mijn leerlingen te ondersteunen. (R)	.11	**-.47**	-.22	.21

Note: Oblim rotation was performed. Factor loadings > .40 are in boldface. Eigenvalues and percentages of variance accounted for by Factors 1, 2, 3 and 4 were 10.75 (35.85%), 3.55 (11.84%), 2.81 (9.38%) and .84 (2.81%), respectively. R = reverse scored.

Table 3
Factor Analysis Concerning differentiation items

Item	Factor			
	1	2	3	4
Familiarity items				
1. Differentiëren tussen mijn leerlingen is iets wat ik vaak doe.	**.73**	-.11	-.20	-.06
2. Differentiëren tussen mijn leerlingen is iets wat ik automatisch doe.	**.91**	.01	.05	-.06
3. Differentiëren tussen mijn leerlingen is iets wat ik doe zonder dat ik mezelf daaraan hoef te herinneren.	**.95**	-.01	.09	-.01
4. Differentiëren tussen mijn leerlingen is iets waarvan ik het raar zou vinden als ik het niet zou doen.	**.66**	.08	-.25	.02
5. Differentiëren tussen mijn leerlingen is iets wat ik zonder nadenken doe.	**.95**	.07	.13	-.09
6. Differentiëren tussen mijn leerlingen is iets wat me moeite zou kosten om niet te doen.	**.68**	-.05	-.06	**.52**
7. Differentiëren tussen mijn leerlingen is iets wat hoort bij mijn dagelijkse routines.	**.90**	.07	.06	-.03
8. Differentiëren tussen mijn leerlingen is iets wat ik al doe nog voordat ik me realiseer dat ik het doe.	**.86**	.11	-.07	-.07
9. Differentiëren tussen mijn leerlingen is iets waarvan ik het moeilijk zou vinden om het niet te doen.	**.70**	-.05	-.05	**.44**
10. Differentiëren tussen mijn leerlingen is iets waarover ik niet hoef na te denken of ik het moet doen.	**.84**	.10	**.75**	-.23
11. Differentiëren tussen mijn leerlingen is iets wat typisch bij mij hoort.	**.80**	.01	-.10	-.18
12. Differentiëren tussen mijn leerlingen is iets wat ik al lange tijd doe.	**.79**	-.03	-.11	-.08
Affective commitment items				
13. Ik geloof in de waarde van differentiëren tussen mijn leerlingen	.07	-.10	**-.81**	.17

14. Differentiëren tussen mijn leerlingen is een goede strategie voor onze school.	.13	0.04	**-.69**	.24
15. Ik denk dat onze directie een fout begaat door differentiatie tussen mijn leerlingen te willen stimuleren. (R)	-.04	-.10	**.50**	.11
16. Het differentiëren tussen mijn leerlingen dient een belangrijk doel.	-.00	.14	**-66**	.03
17. Dingen zouden beter gaan als ik niet differentieer tussen mijn leerlingen. (R)	-.07	.25	**.55**	.25
18. Het is niet nodig om te differentiëren tussen mijn leerlingen. (R)	-.12	.02	**.54**	.20
Continuance commitment items				
19. Ik heb geen keus: ik moet meegaan in het differentiëren tussen mijn leerlingen.	-.05	**.43**	-.28	.08
20. Ik voel druk om mee te gaan in het differentiëren tussen mijn leerlingen.	-.31	.24	.07	**.50**
21. Er staat voor mij te veel op het spel om weerstand te bieden tegen het differentiëren tussen mijn leerlingen.	-.14	**.65**	.08	.28
22. Het zou mij te veel kosten om weerstand te bieden tegen het differentiëren tussen mijn leerlingen.	.07	**.64**	.22	.17.
23. Het zou risicovol zijn om mij uit te spreken tegen het differentiëren tussen mijn leerlingen.	-.08	**.67**	.26	.32
24. Weerstand bieden tegen het differentiëren tussen mijn leerlingen geen werkbare optie voor mij.	.13	**.84**	.09	-.00
Normative commitment items				
25. Ik voel een plichtsbesef om te differentiëren tussen mijn leerlingen.	.01	**.65**	-.21	-.10
26. Ik denk dat het niet goed van mij zou zijn als ik me verzet tegen het differentiëren tussen mijn leerlingen.	.06	**.57**	-.23	-.21
27. Ik zou me niet slecht voelen als ik me verzet tegen het differentiëren tussen mijn leerlingen. (R)	-.20	.18	.05	.26
28. Het zou onverantwoordelijk van mij zijn als ik weerstand bied tegen het differentiëren tussen mijn leerlingen.	.18	**.44**	-.27	-.22

29. Ik zou me schuldig voelen als ik me verzet tegen het differentiëren tussen mijn leerlingen.	.09	**.44**	-.20	-.18
30. Ik voel geen enkele verplichting om te differentiëren tussen mijn leerlingen. (R)	.21	-.11	**.38**	.13

Note: Oblim rotation was performed. Factor loadings > .40 are in boldface. Eigenvalues and percentages of variance accounted for by Factors 1, 2, 3 and 4 were 9.33 (31.11%), 3.93 (13.09%), 3.01 (10,02%) and .89 (2.92%), respectively. R = reverse scored.