The Importance of the Selves

- An explorative study on the importance of self-concept and self-efficacy in performances among second grade children with reading disabilities

Anna Holmquist, Thomas Kaspersson, Björn Larsson, Marcus Meurling,
Lisa Nilsson, Jeanette Rusk, May 2009

The importance of self-concept and self-efficacy has been argued by Albert Bandura and Frank Pajares, amongst others, to influence not only the choice of tasks but also the performance in a given task. The purpose of this study was to identify the importance of these concepts in when looking at performance among second grade students with reading disabilities. The results from these were compared to performances of students in the same grade without reading disabilities, to see if there are any differences. Using tests inspired by Taube, Turneus and Lundberg (1984) to measure self-concept, and by Bandura (1984) to measure self-efficacy, we have come to the conclusion that several of our hypotheses are validated with a statistical significance.

Introduction

One can wonder what John Lennon, Albert Einstein and Leonardo da Vinci had in common. They have all been declared more or less as geniuses in their own respective field of practice and none of them are alive today, but there's more. What fewer people know is that they all had reading disabilities of different severity. The immediate conclusion one can deduce from this is that reading disabilities not necessarily has got something to do with intelligence, and that these three gentlemen all had a belief in their own ability. On the other hand, a disability can be a major influence on what tasks people choose to practice; a lack of belief in one's ability to perform with success can make people avoid tasks they find difficult, lowering their ability and belief even further (Bandura, 1984).

The image we all have of ourselves and how we estimate our ability plays a major part in how we think of ourselves but also in how we actually perform, a point argued by both Albert Bandura and Frank Pajares who both are prominent figures in the research of self-efficacy and by Herbert Marsh in the area of self-concept.

This study focuses on the relationship between self-concept and self-efficacy prior to a reading- and mathematical-assignment and the actual performance in these tasks among second grade children with a reading disability.

Background

The image each individual has of their self is a vital part of development and can influence the way people interact with other individuals in a close surrounding. This is a notion known as *self-concept* in social cognitive contexts, defined as a person's sense of her own value in

comparison to her judgment of other individual's value (Psykologisk-pedagogiska uppslagsboken, 1956, p. 1246). The notion concerns a general image of one's self, distinctly different from *self-efficacy* which instead refers to a more task-specific belief in one's capability. For example; how well a student believes he or she can calculate a set of math problems using addition and subtraction of single digit numbers.

Self-concept constantly develops and evolves during life in an active process of learning. In this process a person continuously updates and establishes who he or she is and where one stands in comparison to other people in a close environment. This process often takes a leap when children start school, where a wider and more demanding social interaction is introduced. Children in this period of life will become more aware of how other children think of them. The attitudes and behaviors of others along with the person's own image of herself are two of the things that help to create the notion of self-concept.

Self-efficacy is, on the other hand, a much more task-specific concept, dealing with how a person estimates her ability prior to a certain task. People who believe they are effective and skilled in their performances learn faster, work harder and longer than people who doubt themselves (Bandura, 1995). This will influence the future choice of undertakings, since people often avoid tasks they don't feel they have the ability to perform successfully. This leads to a so called *Matthew-effect* where people who avoid certain tasks become even worse at performing these, because of the prior avoidance. This in turn leads to an even lower self-efficacy, and means in short that the performance and the belief in one's ability are constantly being lowered (Stanovich 1986)

The ability to assess one's ability prior to the performance of a certain task is something that develops over time, known as *self-appraisal* (Schunk and Pajares, 2001). Children often tend to overrate their ability, since they lack the experience to make accurate assessments of how hard a task really is (Pajares and Schunk, 2001). As children and adolescent mature and acquire more knowledge and experience their self-appraisal will become more and more accurate in relation to their performances.

Purpose and hypotheses

The purpose of this study was to identify the importance of the notions self-concept and self-efficacy among students with reading disabilities in the second grade of elementary school.

To find out how big an influence self-concept and self-efficacy had on performance in reading and mathematics among students with reading disabilities a series of simpler first-step hypotheses were constructed. Also a second series of hypotheses were created to examine possible relations and correlations between the variables and groups. The following hypotheses were constructed;

1. Students with reading disabilities have a lower academic self-concept than students without reading disabilities.
2. Students with reading disabilities have a lower self-efficacy when it comes to reading compared to students without reading disabilities, and show a poorer performance.
3. Students with reading disabilities have a lower self-efficacy when it comes to mathematics compared to students

without reading disabilities, and show a poorer performance.

4. Students with reading disabilities show a stronger correlation between self-efficacy and academic self-concept, compared to students without reading disabilities.
5. Students with reading disabilities show a stronger correlation between self-efficacy and performance for reading, compared to students without reading disabilities.
6. Students with reading disabilities show a stronger correlation between self-efficacy and performance for mathematics, compared to students without reading disabilities.

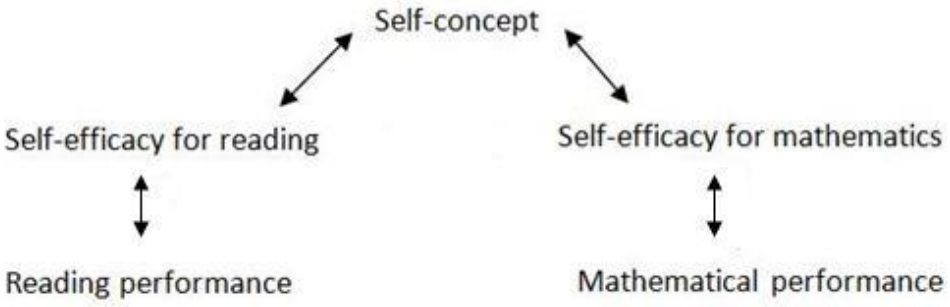

Figure 1. The figure shows variables and possible relationships between these.

Method

The 31 students that participated in the study were all students in second grade in the area of Linköping and Mjölby. Ten of the participants were in the test group and regarded as reading disabled. To decide if a student had a reading disability they had to fulfill two criteria. The first criteria was that the teacher had to find them as reading disabled and the second was their actual performance on the reading test. The rest of the participants formed a control group. The two groups were both students of mixed gender.

The material used in this study consisted of 5 different tests; one test to measure the student's self-concept, two tests to measure their self-efficacy in reading and mathematics, one reading test consisting of two parts, and one mathematical test. All the tests, except the test for measuring self-concept, were specifically developed for this study.

The first test was a general test measuring self-concept, called "Ballongbarnet och Flaggbarnet" (Taube, Tornéus & Lundberg, 1984). The test contained 20 items of 2 statements each and with each statement the students were asked to decide which one of the two they could relate to the best. They were shown a picture of "Ballongbarnet och Flaggbarnet" and answered to the statements by pointing at one of the two. To see how the students estimated their ability to perform on a reading test they first did a test measuring self-efficacy for reading before they were given the actual test. They did this by answering 6 questions on how well they thought they would perform on the test and marked their answers on a line. This was followed by the actual reading test were the students got to read as many words as possible out loud in one minute. This was done twice. After this they got to answer the same self-efficacy questions, but this time before the mathematical test. After this, the student was given the test and was told to

solve as many equations as possible in three minutes.

Results

Hypothesis 1: There is a strong tendency for a statistical difference between students with reading disabilities and students without reading disabilities academic self-concept. $t(28) = 2.15$, $p = .054$

Hypothesis 2: There is a statistical significant difference between the students self-efficacy in reading, and also their performances, $t(28) = 3.06$, $p = .005$ for efficacy, $t(28) = 4.66$, $p = .001$ for performance.

Hypothesis 3: There is a statistical significant difference between the students self-efficacy in mathematics, and they also perform worse, $t(28) = 2.82$, $p = .009$ for self-efficacy for mathematics, and $t(28) = 2.75$, $p = .011$ for performance in mathematics

Hypothesis 4: There are no significant correlations between any of the student groups self-efficacy and their academic self-concept.
$r = .41$ for students without reading disabilities, $r = .49$ for students with reading disabilities, and fisher's r to z test gave: $z = 0.22$, $p = .82$

Hypothesis 5: There are no correlations between any of the student groups self-efficacy and their performance in reading.
$r = .09$ for students without reading disabilities, $r = .17$ for students with reading disabilities, and fisher's r to z gave: $z = 0.18$, $p = .86$

Hypothesis 6: There is a statistically significant correlation between students without reading disabilities self-efficacy and performance in mathematics, but no correlation for students with reading disabilities.
$r = .49$ for students without reading disabilities, $r = -.26$ for students with reading disabilities, and fisher's r to z gave: $z = 1.79$, $p = .0$

Discussion

Hypothesis 1: The results show that there is a strong tendency towards a statistical significance between the two groups (*df =28, p = .54*). This means that students without reading disabilities tend to rate their self-concept higher in academic contexts (school-work etc.). The threshold value was at 5%, and the obtained value was at 5.4% - a result that indicates that students with reading disabilities have a tendency to rate their self-concept lower than average.

Our interpretation of this is that the reading disabled students are aware of their difficulties with reading – a knowledge that has made them doubt their general ability in school.

Hypothesis 2: The results show a statistically significant difference between the groups concerning the rating of self-efficacy. In other words, students with reading disabilities rate their ability to perform a reading test successfully significantly lower than students without reading disabilities (*df = 28, p = .005)*. The threshold value was at 5% and the obtained value was lower than 1%.

The second part of the hypothesis, that the reading disabled students perform worse than students without reading disabilities, also show a significant value $p = .001$. ($df = 28$) Again, the threshold was at 5%, and the obtained value of p was 0.1%.

Hypothesis 3: Students with reading disabilities have a lower self-efficacy when it

comes to mathematics compared to students without reading disabilities, and perform worse. The results show that students with reading disabilities rate their self-efficacy concerning mathematics significantly lower than students without reading disabilities, with a threshold value at 5% and a obtained p-value at 0,9%. (df = 28, p = .009)

The second part of the hypothesis, that the reading disabled students perform worse than students without reading disabilities, also show a significant value p = .011. (df = 28) Again, the threshold was at 5%, and the obtained value of p was 1.1%.

Hypothesis 4: There is a tendency for a correlation within the groups, but this is not significant. There are no differences between the groups. This means that neither students with or without reading disabilties have a strong correlation between their self-efficacy and their academic self-concept.

Hypothesis 5: These results show that neither students with or without reading disabilities can rate their self-efficacy with any correlation to their performance. Neither do they differ in how good they are at predicting their performance according to their self-efficacy. These results show that students with reading disabilities tend to rate their self-efficacy in reading and mathematics the same, but no statistical significance was found. The conclusion is that reading disabled students are poor in their rating, regardless of what type of task is to follow.

Hypothesis 6: The results show a tendency that students without reading disabilities can rate their self-efficacy to a better degree (the rating correlates well with the performance), than students with reading disabilities. This is a significant correlation (r =.49*).
Students with reading disabilities surprisingly show a negative correlation, which means that they do not perform according to their self-efficacy. The correlation even shows that the one's who rate themselves high are the one's who has the worst performances.

Conclusions

The results from our study go largely hand in hand with the previous research by Bandura, Pajares and others. We found that students with reading disabilities often estimate their ability statistically significant lower for both reading and mathematics. The results also show an indication of a Matthew-effect where students with reading disabilities show a lower performance for both reading and mathematics and also estimate their academic self-concept and self-efficacy lower.

Why reading disabled students rate their self-efficacy lower than students without reading disabilities, and perform outside the range of the control group can be ascribed to a number of possible reasons. Low intelligence, poor working-memory, phonological problems, ADHD, a faulty gene, or a Matthew effect are a few of the possible causes.

For future research it would be interesting to include older students to examine how not just self-efficacy and self-concept but also how age might influence performance. It would also be interesting to find out which factors that actually causes a Matthew-effect.

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