Factors in Academic Achievement: Correlations Between Clearly Expressed Expectations From a Figure of Authority, Academic Achievement, and Self-Concept

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Abstract

This study builds on knowledge of the interactions of teacher expectations, self-concept and academic achievement. Participants were Psychology students (N =21) fourteen female, and seven male. Their age ranged from eighteen years old to forty-six years old. This was a matched paired, repeated measures design. Participants were given academic tests then matched into two equal groups. The treatment group was told they did exceptionally well, and that they were expected to do well again. The control group was not told anything about their previous performance or what was expected of them. Both groups were given similar tests as before. We hypothesized that the treatment group would show a greater improvement in part two of this study than the control group. The hypothesis was not supported, t (16.31) = 1.122, p = 1.36, n.s.. We also hypothesized that participants who scored higher on self-concept would have higher scores on the tests. This hypothesis was supported in some areas with various correlations.

Introduction

Over the last several decades there has been much research done on the topic of expectations, and how they relate to achievement. Much of this research has been focused specifically on teacher expectations, and how they may influence or interact with student academic achievement. Through this research many components of how teacher expectations relate to student academic achievement have been established. This topic really started to flourish among researchers after Rosenthal and Jacobson's *Pygmalion in the classroom* (1968) a now famous study, in which certain students were identified as "academic bloomers" to the teachers of first and second graders. The results of this experiment found that the students who had been identified as an "academic bloomer" to the teachers showed a significant "expectancy advantage" (Firestone & Brody, 1975).

A review of the field of expectation studies was compiled by Good and Nichols (2001). In this review, Good and Nichols (2001) referenced Elahoff & Snow, (1971) who warn that the original Rosenthal and Jacobson's *Pygmalion in the Classroom* results were controversial because of various methodological problems. Still *Pygmalion in the classroom* has sparked further research, some of which have found similar findings to support the Pygmalion theory (Firestone, G., & Brody, N. 1975). Negative Pygmalion effects have been seen too, the term for this is referred to as the Golem effect, named by Babad, Inbar, and Rosenthal (1982). Golem effects have not been widely studied, in large part because of ethical issues surrounding negative expectations (Reynolds, D., 2007).

Good and Nichols (2001) remind us that Weinstein and Middlestadt (1979) reported students were aware of teachers displaying different behavior towards different students and that "some teachers did not help low achievers with their seat work and often collect such work before students had a chance to complete it" (Good and Nichols, 2001, p.116). "It is interesting to note that in classrooms where status differential perceptions vary widely (on social and academic dimension), students are more likely to monitor their participation, whereas in contrast, when student differential is less notable (and expectations for classmates more even), participation by low achieving students increases," (Good and Nichols, 2001, page 116).

Research on self-fulfilling prophecies and how they may fit into the equation of academic achievement and expectations has been researched as well. Jussim and Eccles recall that other researchers (Brophy & Good, 1974; Crano & Melon, 1977) have seen that students often live up to the expectations that have been made of them. There are still many more factors that play into the actual influence that can be made on academic achievement from

teacher expectations. For instance, some children are more vulnerable to being influenced by teacher expectations. Good and Nichols (2001) tell us that according to Johnson, (1970), people with personality traits such as being dependant, adult-orientated, and generally other-directed would be more vulnerable to expectation effects. Along with these traits, Good and Nichols (2001 tell us that Persell (1977), and West and Anderson (1976) found that being younger has been identified as another factor that has a role in expectations.

Some of the other factors that play a role in the interaction of teacher expectations and academic achievement have to deal with the natural expectations that teachers form, or more specifically how these expectations are formed and what they are based on. Gender has been studied by Jussim and Eccles (1992), and their findings suggest that gender has a significant influence on the perceptions that teachers form. In their study they found that girls were rated by their teachers as trying harder, and boys as having more ability in math. Consequently girls often receive higher grades in math because teachers want to reward them for their efforts. Teachers will also form expectations based on a student's previous performance (Dusek & O'Connell, 1973).

Other researchers such as (Feldman, Saletsky, Sullivan, & Theiss, 1983) have looked at this issue of expectations from another angle, and that is that not only do teachers form expectations, but students do too. Their study looked at students' locus of control, and found that internal students were more responsive to self-expectancies. Internally oriented students held more positive attitudes for teachers when given positive expectancies about teachers' ability, than the negative group of internally oriented students. Students tended to view that teacher more positively when they had a more positive view of their own abilities. Students are often aware of teacher expectations and differential treatment and because of this students also mediate teacher expectations (Good & Nichols, 2001). It is interesting that because children have different orientations, how they interpret teacher expectations and then mediate those expectations can vary as well.

Many researchers that have joined in contributing to the understanding of teacher expectations have also found an interaction between teacher expectations and academic performance, regardless of whether these expectations were natural or induced. Certain behaviors both from teachers and students may play an intricate role in this relationship. This relates to what has been mentioned above in regards to students mediating teacher expectancies. Even the most subtle differences in teacher's behavior towards different students can be noticed by the students (Rubie-Davies, 2006.) These could be as subtle as a different tone used, or different word emphasis, facial expressions, body language, etc. The interactions that are found within a classroom context, according to Hallinan (2008), feed off of each other, and play an important role in students' attachment to their school, which in turn has an effect on the students' perspective of the schooling experience, and ultimately on their academic achievement.

There have been researchers studying expectations that teachers have on a whole for their classes, rather than towards individual students (Rubie-Davies, 2006). The study that Rubie-Davies conducted found that the teacher expectancy effect was stronger from the teacher to the students, rather than from the students to the teacher. The study aimed to measure student self-perceptions, and to show that these student self-perception changed to be in line with teacher class centered expectations over one year. In this study 256 students were placed into one of three groups. One was a group that had teachers whose expectations had been in years past higher than their students actual achievement, the second group were teachers who were pretty much average with their students academic performance, and the third group were teachers who displayed having lower expectations for their students. Students were given self-perception scales at the beginning of the school year, and also at the end. While all three groups did not show a significant difference at the beginning of the year on their self-perception scales, by the end of the year there were significant differences. The high expectancy group and the average expectancy group increased in score, while the group of low-expectancy decreased over the course of the year. It was shown in this study too that the students had some level aware of the expectations that their teacher held.

Another interesting find from the work of Rubie-Davies that should be noted is that there was a correlation found between teachers' expectations for their classes and the amount of teaching experience that teachers have. Teachers with the lowest expectancies also had the least amount of experience. What is it about more experience in teaching that may influence the expectations for classes? Is this something that can be transferred to new teachers from more experienced teachers? Perhaps more research as to why this may be should be conducted.

Research has shown repeatedly that students pick up on differential treatment that teachers give to high or low achievers and that even when teachers try to control for this differential treatment it still exists. It is interesting to think about teachers having high or low expectations for an entire class, rather than just towards the high or low achievers within a class (referring to the work that Rubie and Davies has done.) I believe an avenue that could lead to more of this disposition among teachers is a more extensive training to help ensure that all teachers will have equally high expectations for all of their students. In order for teachers to be able to teach as though they expect more from their students teachers need to actually believe that all of their students are capable of excelling in their academics, regardless of their gender, ability groups, economic status, race, or any other factor.

Some researchers contend that students are not challenged enough at school. In Masons' study (1973); average achieving eighth grade students that would normally be in a general mathematics course were placed into a pre-algebra class that would normally have high achievers. It was predicted that these students that were integrated into an advanced class under a program of higher expectations, monitoring of progress, and active teaching, would both achieve more than peers that had not been placed in the more advanced class and that in the future these students would enroll in more advanced classes. The results indicate a successful integration of these students. This study does have some cautions to consider. This study was part of a single school's effort to improve academic performance, the principal was involved, and was fully aware of the hypothesis, and knew the students well, so there may have been some biases involved.

The proposed study aims to look at a few of the different factors such as age, gender, perceived economic status, birth order, ethnicity, parents educational level, and self-reported self-concept into a measurable form to further examine the relationship of academic achievement, and expectations that an authoritative figure, such as a teacher, verbally expresses to students. More specifically this project seeks to determine by how much a student's academic achievement can be influenced by an authoritative figure's expressed expectations, and what the role of a student's self-concept and other factors such as their parent's educational level are during this interaction. We hypothesize that participants who were told they performed exceptionally well would show a greater improvement in part two of this study than the participants in the control group.

Method

Participants

While 131 students participated in the first session of this study, a total of 21 students completed both sessions and only their data were included in the analyses. All participants were Psychology 101 students at Boise State University and received course credit for their participation in this study. There were 14 (66.7%) female and 7 (33.3%) male participants, age ranged from 18-46, M= 27.9, (*SD*= 10.17). There were 11 freshmen, 6 sophomores, 2 juniors, and 2 seniors. Of the participants that responded on their ethnicity, most (17; 94.4%) participants identifying themselves as European American and the remaining (1; 5.6%) identified themselves as being Asian American.

When asked about their families' economic class was for most of their growing up 8; 38.1% reported middle class, 7; 33.3% reported lower-middle class, 5; 23.8% reported upper-middle class, and 1 ;4.8% reported upper class. When asked their placement in their families 10; 47.6% of participants responded that they were a middle child, There were equal responses from participants 5; 23.8%' for each choice of oldest child and youngest child, and the remaining 1; 4.8% participant reported being an only child. 11; 52.4% of the participants reported their fathers highest level of education as being a bachelors, 4; 19% reporting their fathers' highest level of education was high school and the same amount (4; 19%) reported some college. 1; 4.8 % of participants reported their fathers' highest level of education as being a masters and the same amount (1; 4.8 %) of participants reported doctorates.

When asked about their mothers' highest level of education there was an equal amount of participants (6; 28.6%) that responded with high school and bachelors. There was also an equal amount of participants (3; 14.3%) that responded with their mothers' highest level of education as being a masters and some college, 2; 9.5% reported their mothers as having an associates, and 1 participant (4.8%) reported their mothers' level of education as below high school.

Materials

Two short academic tests that were developed for this study using eighth-grade level text books and seventh and eighth grade level sample test questions released from California standards tests found online were used in this study The questions on the tests covered areas such as sentence structure, spelling, and identifying grammatical errors, and included science reasoning, percentages, ratios, algebraic problems, and measurement conversions for the math and science questions. These questions were presented to participants in the form of a paper packet. Demographic information was obtained through a self-created questionnaire. This study also asked questions related to the students' self-concept using a short self created questionnaire. A projecting device was used for the word-task words to be displayed to the students.

Design and procedures

This was a matched paired, repeated measures design. Participants were matched primarily on test scores obtained during study and were matched secondarily based on demographic information obtained during this study. Data was analyzed using the SPSS software program.

During session one of this study, participants were shown thirty words on a screen for thirty seconds, they then had thirty more seconds to recall as many as they could. Next participants had twelve minutes to complete an academic test. Lastly, participants were asked to complete a short demographic questionnaire to complete the first session.

After the first session took place, participants were divided into two groups matched based on information gained from the first session. Approximately one week after the first study took place; participants were invited back for the second session. The second session was held separately for each group.

During the second session participants completed another word memorization task, and completed another academic test. The format and difficulty level, and amount of time allotted for both of these tasks were consistent with the first session. Instead of a demographic questionnaire there is a short questionnaire asking questions related to self-concept.

Treatment was administered to one of the groups prior to beginning session two, and consisted of what was said to the participants. The treatment group was told that they performed extremely well, much better than the other group of participants and that they are expected to perform well again. The control group is told that they are here to perform similar tasks, and see what the results are. The instructions and verbalized expectations given to the control group are left rather ambiguous and vague. All participants are debriefed after each session; it is however, only at the end of the second session when all is told regarding the nature of this study.

Results

Independent sample *t*-tests were ran to show the difference of scores of the first session from the second session between the two groups. The hypothesis that participants who were told they performed exceptionally well would show a greater improvement in part two of this study than the participants in the control group was not supported. Numerous correlations were found with the information obtained in this study.

There was a correlation between how participants responded to the statement "I prefer activities or school work that are somewhat difficult or challenging" and how participants responded to the statement "I tend to attribute my success to ability and my failures to lack of effort or bad luck," $r(19) = .48$, $p < .05$. The correlation between how participants responded to the statement of "I prefer activities or school work that are somewhat difficult or challenging" and how well the participants performed on the science section in session two was significant, $r(19) = .66$, $p < .01$.

The correlation between how participants responded to the statement "I tend to set realistic, reachable goals thereby making success more possible" and how participants performed on the memorization task in the second session was significant, $r(19) = .53$, $p < .005$. The correlation between how participants responded to the statement "I tend to set realistic, reachable goals thereby making success more possible" and how participants performed on the memorization task in the first session was significant, $r(19) = .49$, $p < .005$. The correlation between how participants responded to the statement "I tend to attribute my success to ability and my failures to lack of effort or bad luck" and how participants performed on the memorization task in the first session was significant, $r(19) = .46$, $p < .005$.

The correlation between the mothers' level of education and how participants performed on the math section in session one was significant, $r(19) = .56$, $p < .001$. There was a significant correlation between the mothers' level of education and how participants performed on the reading section of session one, $r(19) = .54$, $p < .005$. The correlation between how participants performed on the science portion in session two and the mothers' level of education was significant, $r(19) = .52$, $p < .005$.

There was a negative correlation of significance between "I am persistent, I usually finish what I start" and how participants performed on the sentences in the first session, $r(19) = -.51$, $p < .05$. There was a negative correlation between how participants performed on the sentences in the first session and how participants responded to the statement "I take school work seriously and strive to do well," $r(19) = -.49$, $p < .05$.

Discussion

While numerous studies have examined the role of self-concept, and expectations, this particular study is unique in that this is done over only two meetings. While results were not statistically significant for what we were seeking, there are still findings worth consideration. The correlations found between the participants mothers' highest level of education and how the participants performed on the math and reading for the first session and with science on the second session is worth noting. This is interesting because the mothers' and fathers' education level were correlated, while the fathers' education level does not appear to be correlated with any of the academic tasks. Is this because mothers typically spend more time with their children than do fathers?

Limitations

Because interactions between the authoritative figure and the students were very limited, it is not advisable that any findings from this study be applied to a broader context, such as one that includes a teacher who has far more interactions with students. Also, participants used in this study were drawn from a convenience sample consisting of undergraduate psychology students at one school in Boise Idaho; therefore findings may not be generalized to a wider population.

It should be noted that the materials used in this study were designed solely for use in this study. They have not been used previously, and therefore the validity of these measures has not been determined. With the attrition rate so high between sessions, it is advised that this study be conducted in one session.

Despite the limitations, this study contributes to the existing knowledge on expectations and how they and the demographic information obtained in this study relate to academic achievement. The design of this study is unique in that the experimenter is not an actual teacher, nor do the student's and the experimenter share a relationship outside of this hour long study. This design could be used as a basis for future studies that want to explore the extent to which expectations influence academic performance. This study is important because it provides not only a good example for future study set-ups, but it also has met its aim to lessen the gap between the unknown and known factors and sensitivity of how teacher expectations can influence student academic performance.

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