Educational Achievement and Motivation to Learn

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Although the public view of higher education and the value of an undergraduate or graduate degree is shifting in our current cultural landscape, most would still agree that obtaining such a degree is one of the best ways for an individual to find a successful career. However, attending and finishing college is a path full of challenges and obstacles. Baldwin and Koh (2012) demonstrated the range of difficulties that a student pursuing an undergraduate degree must face in order to succeed. Due to the difficult nature of such a choice, it might be assumed that individuals who have achieved such levels of education are generally motivated by challenges. The purpose of the present study is test this assumption. The specific research question under investigation is the relationship between students' abilities to stay motivated through challenges and the education level they have achieved.

Research on student motivation in learning has been wide-ranging and include work that is specific to different fields, such as science, foreign language, or math, as well as work that focuses more on the cultural or external factors affecting motivation. For example, a study by Nadrah et al. (2017) examined ways of increasing the motivation of students to learn physics by integrating cooperative games into lesson planning. On the other hand, Mkhize (2017) considered the importance of motivating adolescent learners in the study of mathematics. Many studies looked more broadly at the range of factors that impact student motivation, especially from a cultural perspective. For example, Tumuheki et al. (2016) noted that external and societal factors concerning the perception and value of higher education in Uganda have a noticeable impact on the motivations and decisions of students pursuing degrees in higher education. In a recent dissertation, Grosskopf (2017) analyzed the range of factors that impact the motivation of current ungraduated students. Her study demonstrated that students are more motivated to learn

when they are able to relate the material covered with their own future career goals. On the other hand, M. McCaslin (2008) identified three major opportunities for motivational change within students: supports, challenges, and threats. This study was conducted on students in grades 3-5 in classrooms undergoing Comprehensive School Reform. Together these studies covered primarily ways of impacting student motivation. The first two examples investigated the impact in order to increase student engagement within a specific classroom environment; whereas, the latter studies were more broadly concerned with the types of considerations and variables that contribute to motivation formation and maintenance.

These studies, however, did not directly demonstrate the benefit of student motivation. Rather, a motivated student is seen as an assumed good and a necessity in order for successful participation. However, one study by Pace RC (1990) argued that low motivation toward learning and low grades are directly connected; this low motivation frequently led to student disengagement both inside and outside of the classroom. While this study supported a correlation between low motivation and low grades, it did not necessarily demonstrate a correlation between low achievement and low educational success. Moreover, studies that suggest the benefit of high student motivation beyond test scores are relatively lacking. What is the ultimate goal of increasing student motivation to learn? Is there a demonstrable good that comes from this pursuit? The current study considers the possible benefits of high levels of motivation. The hypothesis for the current research is that students who are motivated by challenges are more likely to achieve higher levels of education—an undergraduate and graduate degree—than students who do not rate themselves as highly motivated by challenges.

Method

In order to test this hypothesis a quantitative study was conducted which evaluated individuals' self-assessment of their motivation by challenges and compared these assessments to the level of education they had presently achieved.

Participants

Originally, 372 individuals participated in this study. However, not all participants completed the entirety of the survey. Participants who did not complete their level of education or respond to all learning statements were eliminated. Additionally, because this study is concerned with the relationship between motivation by challenges and educational achievement level, all participants under the age of 25 were also eliminated. This age minimum was determined because in 2012 around 80% of college students were ages 18-24 (Marketing Charts). Therefore, by eliminating participants aged 24 and younger, I am eliminating the majority of cases who had not had the opportunity to finish college. After these eliminations were made, the study consisted of 158 participants. Of these participants, 105 (66%) were female and the remaining 53 were male. 135 participants (85%) identified as Caucasian, while five participants identified as Asian-American or Pacific Islander, four as African-America, another four as Hispanic/Latino, two as Native-American, five as Other, and three did not respond. The age range of participants was 25 to 65 and the mean was 39.

Research Design

The participant survey defines motivation as "a desire or want that energizes and directs goal-oriented behavior." Being motivated by challenges was a latent, independent variable derived from the ratings of participants on nine of the survey Learning Statements: (1) "When an activity isn't challenging, I find something else to do"; (3) "When tasks are too easy, I lose

interest"; (5) "When presented with new tasks, I get excited"; (19) "I carry on and complete tasks despite being tired"; (20) "Even when I am tired, I finish my work"; (21) "I remain interested in a topic or subject regardless of the topic"; (22) "I frequently seek out further information about topics discussed in class"; (23) "When given a choice, I choose the more difficult tasks"; (24) "I seek out new things to learn".

The responses to these statements were on a 1 to 5 Likert-scale (e.g. 1 = *Never*; 2 = *Rarely*; 3 = *Sometimes*; 4 = *Often*; 5 = *Always*). Statements 5 and 19 to 24 were identified by Dr. Ronna Turner as specifically identifying a participant's ability to stay motivated through challenges. Due to their similarity in wording and sentiment, statements 1 and 2 were added to this list. Two other broad types of motivation were covered by the remaining statements on the original survey. Statements 6 through 13 addressed how motivation is affected by anxiety or the perceived judgment of others. Statements 14-18 examined how people's motivations are affected by working alone or with others. For the purpose of this study, the response to these statements were not considered. In order to represent the general level of learning motivation, the Likert-scaled responses to each of the nine statements was averaged. The average score, to the tenth of a point, was used as the representative variable for each respondent.

Level of educational achievement was a dependent variable in this study derived from student reporting on their educational background. Five distinct categories were listed on the survey: "Less than high school", "High school diploma", "Some college", "Undergraduate degree", and "Graduate degree". However, none of the 158 participants recorded "Less than high school"; therefore, there were four distinct categories of educational achievement. For the purposes of this study, the completion of an undergraduate or graduate degree were considered high academic achievement.

Measures

Information was obtained through an anonymous survey. The survey was developed by the students in Research Methods in Education (ESRM 5013) at the University of Arkansas, Fayetteville in 2003. These students gathered data through convenience sampling, requesting responses from friends, family, other students, and acquaintances. Participants were asked to fill out a hard copy of the survey and to submit it anonymously. These surveys were filled out voluntarily by the requested participants. The initial research project received Institutional Review Board (IRB) approval before the data was collected.

Procedure

Participants who rated the statements as *Often* or *Always* (4 or 5) were considered as having a high level of motivation, whereas rating the same statements as *Never* or *Rarely* (1 or 2) reflected a low level of motivation. The responses to these nine questions were averaged for each participant for purposes of analysis. Next, three categories of learning motivation were created in order to assess any correlation to level of academic achievement. An average rating of 0-2.5 indicated low motivation in times of challenge; whereas, an average rating of 3.5-5 reflected that an individual was highly motivated by challenges. Finally, an average rating of 2.5-3.5 suggested a moderate level of being motivated by challenges.

Results

Table 1 illustrates the overall breakdown of participants based on their highest level of educational achievement. Nine of the participants received a High School diploma. 37 of the participants had some college, while 44 have completed college. An additional 68 received a graduate degree.

Level of Education	Number of Participants
High School	9
Some College	37
Undergraduate Degree	44
Graduate Degree	68

Table 1: List of educational achievement of participants.

Table 2 demonstrates the average response rating among the 158 participants. Statement 21 ("I remain interested in a topic or subject regardless of the topic") had the lowest average, with a total of 2.93, while Statement 20 ("Even when I am tired, I finish my work) had the highest at 3.91. The average score of the averages was 3.51 with a standard deviation of 0.4.

Statement	Average Rating
1	3.27
3	3.25
5	3.80
19	3.87
20	3.91
21	2.93
22	3.34
23	3.30
24	3.85

Table 2: Average rating on each of the Learning Statements that concern being motivated by challenges.

In order to determine if there is a significant relationship between learning motivation and educational achievement, a chi-square test was performed. Table 3 illustrates the distribution

of response averages based on education level. As stated above, the categories for average response were as follows: (1) 0-2.5 represented not highly motivated by challenges; (2) 2.5-3.5 represented moderately motivated by challenges; (3) 3.5-5.0 represented highly motivated by challenges. The data shows that of the nine participants who received only a high school diploma, only one was not motivated, five were moderately motivated, and three were highly motivated. For the second level of educational achievement (*Some college*) there were 37 participants. Amongst this group, only one rated as not motivated, while 23 were moderately motivated and an additional 13 were highly motivated. Of those whom have received an undergraduate degree, there were 26 participants who were moderately motivated and 18 who were highly motivated. Those receiving a graduate degree were by far the most numerous category of participant, with 68 individuals. Of those participants, again only 1 registered with low motivation, while 35 responded with moderate motivation and 32 with high motivation. Overall, 3 individuals had low motivation, 89 were moderate, and 66 were highly motivated by challenges.

Level of Education	0-2.5	2.5-3.5	3.5-5	Total
High School	1	5	3	9
Some College	1	23	13	37
College Degree	0	26	18	44
Graduate	1	35	32	68
Total	3	89	66	158

Table 3: Comparative table providing the number of individuals at each education level and their average motivation rating.

In order to perform a chi-square test, the first step was to identify the expected frequencies of each of these instances. Table 4 provides the results of formulating the expected

frequencies for each level of education and rate of motivation. After establishing the expected frequencies, a chi-square test was performed. This resulted in a chi-square value of 6.65. For this study, the alpha was set at .05 level. Based on the number of rows (4) and columns (3), the test has 6 degrees of freedom. Therefore, in order to be statistically significant at .05 level with 6 degrees of freedom, our chi-square result would have to be higher than 12.592. Because our score is much lower than the tabled value, our result is not statistically significant. Therefore, we must not reject the null hypothesis, and we must conclude that there is no statistically significant relationship between level of educational achievement and motivation to learn.

Level of Education	0-2.5	2.5-3.5	3.5-5	Total
High School	.17	5.07	3.76	9
Some College	.7	20.84	15.46	37
College Degree	.84	24.78	18.38	44
Graduate	1.29	38.30	28.41	68
Total	3	89	66	158

Table 4: Expected frequency of individuals' motivation rating categorized by education level.

Discussion

This paper provides a preliminary study into the possible connections between an individual's level of academic achievement and their personal assessment of their motivation to learn, specifically in challenging situations or while experiencing fatigue. As discussed above, many previous studies have addressed the variety of factors that impact an individual's motivation to learn; however, not many of those studies demonstrated the inherent benefit in increasing student motivation and engagement. Many scholars assumed that increased motivation was an inherent good or would result in higher test scores or achievement level. In

order to address this assumption, this study attempts to identify a correlation between one's achievement level, measured through educational achievement, and one's motivation to learn. The sub-category of being motivated by challenging situations, despite fatigue was in recognition of the academic rigor and challenge of completing a college education (and before the age of 25) or receiving a graduate degree (Baldwin & Koh, 2012). Based on the general view of higher education, both undergraduate and graduate level, it was hypothesized that such life choices would be appealing, and therefore more achievable, to those who stayed motivated or thrived in challenging situations and continued on despite fatigue.

After careful consideration of the data, this study concludes that there is no statistically significant relationship between an individual's level of education and his or her ability to stay motivated by challenges. While a higher percentage of those with a graduate degree rated themselves as highly motivated by challenges (47%) than those with only some college (35%) or high school (33%), overall, there was not an identifiable and statistically significant correlation. By not supporting the hypothesis, a question arises as to the perceived goal or purpose of increasing student motivation and the need to demonstrate the benefits of such efforts, not only within individual subjects or classrooms, but from the broader perspective of educated and informed citizens. Whether educational level is the proper measurement of such a broad overview is left up to future researchers to determine. Despite this failure to provide a proven benefit of increased motivation, the study does support the myriad of previous studies that point to the multi-faceted variables that go into impacting an individual's motivation to learn. As discussed in the introduction, ethnicity, culture, age, gender, subject matter, and so much more can impact motivation.

There are a number of ways that this study might be improved upon. An obvious area of improvement would be to widen the participant base. Not only would a greater number of participants be beneficial, but also greater attention paid to the age of these participants. Having a more substantial participant base of individuals who have had ample time to complete college, if not a graduate degree, would possibly enhance our results. Additionally, it would be a more rigorous study if a more systematic means of sampling was employed, such as Random Sampling or Cluster Sampling. Through Cluster Sampling, additional correlations could be analyzed more rigorously as well, such as gender or ethnicity and the impact of those variables on motivation or educational achievement. Another adjustment for future studies would be to develop a survey that looks specifically at how learners rate their motivation by challenges. The present survey addresses at least three different types of learning motivation, of which challenges is only one. Finally, one could also add or redefine a category. Presently, the survey lists Some college, Undergraduate degree, and Graduate degree, but no option for Some graduate school, which might also be a worthwhile category to analyze and allow a researcher to better analyze claims of achievement.

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