

Self Efficiency as a Tool for Great Performance in Academics

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Date of Submission: 02-04-2024

Date of Acceptance: 11-04-2024

ABSTRACT

The main purpose of this paper is to discuss how self-efficacy is developed and the way it influences students' academic performance. Based on a socio-cognitive perspective of motivation, this study is to discover how self-efficacy which is also known as 'beliefs in one's capabilities to organize and execute the courses of action required to produce given achievements' Once a person has acquired a high level of self-efficacy belief he will be motivated to put in more effort in his academic pursuits. Students with high self-efficacy are able to plan effectively and successfully in completion of a task (Bandura 1982). The Bandura (1982) found that students with high self-efficacy are able to complete complex task. Further content analysis of interviews responses showed that students with high self-efficacy planned to study complex subjects in future. A cross cultural study is strongly recommended in these issues that determine the students' performance.

Keywords: self-efficacy, socio-cognitive, academics, belief, cultural

I. INTRODUCTION

Student's career is a byproduct of many factors. One of the most important variables is student's self-efficacy. Albert Bandura define self-efficacy as 'Beliefs in ones capabilities to organize and execute the courses of action required to produce given achievements. He believed that the level of self-efficacy can be used to determine whether a task will be initiated, the amount of effort that will be expended and the level of persistence needed to complete the task when face with obstacles and aversive experiences.

Social cognitive psychologists highlighted the effects of self-efficacy on students learning and achievement of academic goals. It was discovered that students with high self-efficacy are confident to understand a lesson, to solve educational

problems, and to select most difficult courses. (Zimmerman et al,1992). They believed that they can understand and solve a mathematic problem as compared to students with low self-efficacy (Schwarzer,1992 Zajacova, Scott, Lynch & Espenshade2005). Self-efficacy influences selection of courses and extracurricular activities as well. (Bandura 1982, Zimmerman et al 1992)

Bandura theorized self-efficacy in his seminar article extensive studies were done to extend the role of self-efficacy as a mechanism to better understand behavioral change in the area of academic performance, cognitive functioning, health promotion, athletic performance, career choices and coping with mental disorder.

Self-efficacy is multidimensional, that is, domain specific or context dependent. This means that high sense of efficacy in a particular domain may not necessarily translate into in another domain; there may be different levels of self-efficacy beliefs occurring in various contexts. In this case the researchers decided to study how self-efficacy serves as a tool for great performance in academic.

Sources of self-efficacy

Self-efficacy is a learned process social cognitive psychologists (Bandura 1989) identify for important sources of self-efficacy

1. Performance Accomplishment
2. Various Experience
3. Verbal persuasion
4. Physiological information

1. Performance accomplishment: student's earlier academic record. Students with poor grades in previous examination develop low self-efficacy. Teachers are required to help them in organizing cognitive components of learning and memory. Experience of success, the feeling of mastery enhances self-efficacy. Once a person has developed a strong self-efficacy, one failure does not have much influence. The effects of failure

depend on the moment in the learning process and the total pattern of experiences. Once a person has self-efficacy, he tends to generalize from one experience to another. Teachers must provide difficult task to students which can be achieved with efforts, and hard work (Omrod, 2002) this is one of the effective cognitive processes to resocialise students to achieve an excellent performance. It goes without saying that students whose previous academic results are excellent, teachers must further enhance high self-efficacy of such students and one effective technique is intrinsic motivation.

2. Vicarious Experience: Seeing others perform successfully also is an important source of self-efficacy. This is based on observational learning. Students observe the output of their classmates and are convinced that their classmate can improve on their grades and learn lessons; they are also able to learn and understand difficulty.

However, the people serving as an example should show similarity to the observer in those characteristics which are relevant for the issue observing others is a weaker source of self-efficacy than direct experience, but can contribute to a person's judgment of his own self efficacy

3. Verbal persuasion: Verbal persuasion is the most often used source of self-efficacy because it is very easy to use. Teachers politely point out the drawback of the students work. Over by helping the behavior may have on the student's confidence regarding the performance of the student academic work. Convincing students that they have the ability to perform a behaviour is weaker than the previous two sources because it does not concern one's own experience or examples of them, it can be good supplementation to other sources. If people are convinced of their abilities they will; be more inclined to persevere and will not give up easily. However this is only the case with students who are able to carry out a task and is useless if it is not realistic.

4. Physiological Information: Information derived from the human body can also influence a person's estimate of his capability to show a specific behavior. In judging their own capacities, students use information about their physiological and emotional situation. They experience tension, anxiety, and depression as signs of personal deficiency.

According to (Bandura 1986) he said self-efficacy from the different sources needs to be processed cognitively, many factors influence the cognitive estimation of experiences, for instance personal situational social and time factors.

In forming a judgment of efficacy persons have to weigh and integrated information which form the different sources. A certain hierarchy exists in the four information sources of self-efficacy. The first source shows the repeated execution of the task which is the most powerful source because it is based on direct information. Students immediately experience success or failure. The other three sources are all based on indirect information modeling, seeing other people demonstrate the desired behavior, can offer very important self-efficacy information but is not based on one's experience.

Persuasion is a weaker source, especially when used by it. This source usually is used to support the other sources. The last source, the physiological information is the least concrete. Where students rely on their physical and emotional states to judge their capabilities. (Bandura , 1997, Shunk & Carbonari, 1984)

SIGNIFICANCE OF THE STUDY

Self-efficacy refers to the persons belief in his or her ability to organize and execute the courses of action required to achieve goals (Bandura, 1997). Also, since they believe in their abilities, student with high level self-efficacy is optimistic about their learning and also the materials that needs to be learned. Therefore, it is concluded that high self-efficacious students experience more positive emotions while studying and learning, which can in turn lead to better academic performance. A self-efficacy belief influences how long a student will persist when engaging with academic challenging tasks. Students, who have a strong sense of self efficacy set higher goals for themselves, establish strategies to accomplish their goals, believe their attainment of the goals is valuable and maintain their motivation over time (Schunk & Pajares, 2009).

Furthermore, environmental factors like expectations and support of others can have an adverse effect on self-efficacy (Bandura 1986). The presence of social support in the form of instrumental support or persuasive communication is helpful in overcoming obstacles in the pursuit of behavioral goals. The relationship between support received from others and self-efficacy has been demonstrated (e.g, Dilorio, Faherty, Talbot, Nouwen , Gringas, Gossellin & Audet, 1997).

BENEFITS OF SELF EFFICACY TO STUDENTS

Self-efficacy has a significant influence in different areas such as education, research etc.

1. Persistency to stress: Having a high level of self-efficacy can help you change your perspective on stressful issues. Instead of all owing self-doubt to bother you at stressful times, you may be inspired to develop solutions that will work for you as a student.

2. Educational achievement: Students with high self-efficacy have a positive feeling that if they put their minds to it, they can overcome any academic difficulty that is set before them. A learner with high self-efficacy will also create objective for him or herself and employ tactics to assist them in reaching these academic goals.

3. Ability to set higher goals: Students, who have a strong sense of self efficacy, set higher goals for themselves, establish strategies to accomplish their goals, believe their attainment of the goals is valuable, and maintain their motivation over time. (Schunk & Pajares, 2009).

HOW TO IMPROVE SELF EFFICACY FOR STRUGGLING STUDENTS

(Margolis & McCabe 2006): Use moderately difficulty tasks. If the task is too easy, students will be boring or embarrassing and may communicate the feeling that the teacher doubts their abilities and a too difficult task will lead to a low self-efficacy. The target is to use a moderately difficult task to improve the student capabilities.

1. Use peer models: students can learn better by watching a peer succeed at a task. Peers may be drawn from groups as defined by gender, ethnicity social circles, interest achievement level, clothing or age.

2. Capitalize on student's interest: Tie the course material or concepts to student's interest such as sports, pop culture, movies or technology to boost their capacity.

3. Allow students to make their own choices: Set up some of the course that allows students to make their own decisions, such as with flexible grading assignment options or self-determined due dates to their abilities.

4. Encourage students to try: Give them consistent, credible and specific encouragement such as, you can do this, I believe in you. We have set up an outline on how to solve this equation. Just follow the steps and you will be successful.

5. Give frequent, focused feedback: Giving praises and encouragements goes a long way in affecting student ability. It is very important, however it must be credible. Use praises when earned and avoid hyperbole. When giving feedback on student performance compare to past performances by the same student don't make comparison between students.

Self-efficacy has several effects on thought patterns and responses. Low self-efficacy can lead people to believe that tasks are harder than they actually are, while high self-efficacy can lead people to believe tasks are a lot easier than they are. These often result in poor task planning, as well as increased stress.

Educational Implications of Self Efficacy. Studies have also shown that students with high levels of self-efficacy participate more in class work harder, persist longer, and have fewer adverse emotional reactions when with students with low self-efficacy.

HYPOTHESIS 1

Research students with high self-efficacy will secure higher grades on a test as compared to research students with low self-efficacy. In other words, subjects with high self-efficacy believe to solve a greater number of mathematical problems.

HYPOTHESIS 2

Research students with high self-efficacy will prefer complex subjects than research students with low self-efficacy. In other words, subjects with high self-efficacy will choose different courses of studies in the future.

METHODOLOGY

This study is conducted on a representative sample of 520 students of Franej Educational Centre, Benin City, Edo State. Proper representations were given to the relevant sub sample technique was used for the study. It is a survey study.

VARIABLE

Independent Variable, Self-efficacy, Dependent Variable, Academic performance in Mathematics. Instruments used

Scale of self-efficacy (Meera and Jumana 2013) was administered for collecting adequate data. It was prepared and standardized by the investigators. The scale was constructed by considering the different factors affecting self-efficacy, according to available literature, existing tools on self-efficacy and expert advice.

The investigators identified '6' dimension as follows; use of Social Resources, Academic Achievements, self-regulated learning meet expectations of others, social self-efficacy and using and relying on parental and community support. Initially investigators established '60' items after standardization the scale consisted of 48 items. Content and construct validity of the scale was established. Reliability was established

according to test-retest method. The correction of coefficient obtained is 0.892.

Statistical Technique Used

Statistical packages for social sciences (SPSS) Version 18.0 were used to analyze the collected quantitative data. Preliminary descriptive analysis t' test (Test of Significance of difference between mean) and Carl Pearson's product moment correlation were used to analyze the data and standardize the instruments.

Procedure of the study

Survey method was carried out on the sample consisting of secondary school (9th class)

students. The scale of self-efficacy and a test of academic performance in mathematics were administered and scoring was done. The data was entered into SPSS. Preliminary and Descriptive analysis (mean Difference Analysis) were carried out. The researcher reached their findings and conclusions according to the results obtained from the analysis.

Result of the study

The scored data were analyzed and results obtained are given in the text below in detail.

Results: Independent and Dependent variables for the total sample

Variable	Mean	Median	Mode	SD	SKEWNESS	0
Academic Performance in Mathematics	16.58	16	15	5.329	0.328	0.12
Self-efficacy	140.19	150	70	30.781	0.694	0.022

Result of the test of significance of difference between mean scores for Boys and Girls

Variable	Rural(N=230) Mean	Rural(N=230) SD	Urban(N=290) Mean	Urban(N=290) SD	T- Value	Level of significant
Self-Efficacy	140.742	28.812	140.742	30.812	1.234	NS
Academic Performance in Mathematics	16.016	4.523	15.412	5.521	0.489	NS
Not significant						

The results reveal that there is no significant difference between boys and girls in the academic performance in mathematics and self-efficacy, as the t- value obtained is 1.234 and 0.489 which is less than 1.96, the critical ratio for significance at 0.05 levels.

Result of the test of significance of Difference between mean scores for Rural and Urban school students.

Variable	Rural(N=300) Mean	Rural(N=300) SD	Urban(N=220) Mean	Urban(N=220) SD	T- Value	Level of significant
Academic Performance in Mathematics	14.892	4.812	17.932	6.162	4.214	0.01
Self-Efficacy	132.81	30.52	154.084	29.64	4.929	0.01

The results reveal that the Rural and Urban students differ significantly in their academic performance in mathematics and self-efficacy, both variables are significant at 0.01 levels. So, the t-value is greater than 2.58, the critical ratio of significance. Graphs can be a helpful way to visualize the relationship between

self-efficacy and academic performance. Here are a few types of graphs that could illustrate this relationship:

1. Scatter Plot: A scatter plot can show the correlation between self-efficacy scores and academic performance scores for a group of students. Each data point represents an individual

student, with self-efficacy scores on the x-axis and academic performance scores on the y-axis. If there is a positive correlation between the two variables, the data points will tend to cluster in the upper-right quadrant of the graph, indicating that students with higher self-efficacy tend to have higher academic performance.

2. Line Graph: A line graph could be used to illustrate changes in self-efficacy and academic performance over time. For example, you could plot self-efficacy scores and academic performance scores at different points throughout the academic year to show how they fluctuate in relation to each other. This could help identify trends, such as whether improvements in self-efficacy precede improvements in academic performance.

3. Bar Graph: A bar graph can compare average self-efficacy scores and academic performance scores between different groups of students. For instance, you could compare the average self-efficacy scores and academic performance scores of students who receive intervention to boost self-efficacy with those who do not receive such intervention. This could help determine the effectiveness of interventions aimed at improving self-efficacy in enhancing academic performance.

4. Histogram: A histogram can illustrate the distribution of self-efficacy scores and academic performance scores within a group of students. This could help identify patterns, such as whether there is a significant proportion of students with low self-efficacy and low academic performance, or whether most students fall into the high self-efficacy, high academic performance category.

5. Box Plot: A box plot can show the spread and distribution of self-efficacy and academic performance scores, as well as any outliers within a group of students. This could provide insights into the variability of self-efficacy and academic performance within the group, as well as identify any students who may be performing exceptionally well despite having low self-efficacy or vice versa.

II. SUMMARY

A strong sense of self efficacy enhances student's accomplishment and personal wellbeing in many ways. It is considered as accurate predictor of performance; furthermore, self-efficacy is an important cognitive skill which ensures success in life. In this study the relationship between self-efficacy and academic performance has been studied extensively according to available literature.

It has already been found by many studies that there is a relationship between self-efficacy and academic performance. The study of group

differences reveals that there is significant difference in academic performance and self-efficacy in rural and urban students.

The present study helped to find out the relation between self-efficacy and academic performance in mathematics of secondary school students of Franej Educational center.

Students who have high self-efficacy belief showed better performance in learning and thinking and should also have better performance in education level of learning. Self-efficacy is positively correlated to academic performance. For better result in Academic performance, schools should improve on class room practice.

Teachers should aim to deliver instructions in a way that opportunity for mastery experience. Teachers should promote co-operative learning strategy. It will maximize learning of students from teachers and from one another. Teachers should also promote activity oriented classrooms and provide opportunities for a wider range of communicative experience. Mutual interaction and urban expression should enhance self-efficacy of learners should be given plenty of opportunities to explain their ideas to their team mates and to lead the discussions.

III. CONCLUSION

Building self-efficacy in students today is highly important. Along with creating a good school image, other practice measures also have to be taken. Teachers can do this by conveying high expectations of students and praising good work. To help struggling learners with low self-efficacy and get them to invest sufficient effort and persist on challenging tasks, teachers must systematically develop high self-efficacy within these students. Teachers must find out efficient and enjoyable ways of communicating to students there by making it interesting.

In the past 15 years, many studies have shown that relationship between self-efficacy and academic performance exists. According to relevant literature, as well as current research findings we can come to the following conclusions. Since self-efficacy is one of the most influential factors for student performance in academics, it appears to be very important for the teacher to help students develop their self-efficacy.

Certainly! Self-efficacy, which refers to an individual's belief in their ability to succeed in specific situations or accomplish tasks, plays a crucial role in academic performance. Here's how self-efficacy can serve as a powerful tool for achieving great academic performance:

1. Motivation: Individuals with high self-efficacy are more likely to be motivated to pursue challenging academic goals. They believe that their efforts will lead to successful outcomes, which increases their willingness to invest time and energy into their studies.

2. Persistence: Students with high self-efficacy tend to persevere in the face of obstacles. They view setbacks as temporary and are more likely to exert effort to overcome difficulties rather than giving up easily.

3. Effective Learning Strategies: Self-efficacious students are more likely to engage in effective learning strategies such as goal-setting, time management, and seeking help when needed. They are confident in their ability to master academic tasks and are proactive in seeking out resources to support their learning.

4. Emotional Regulation: High self-efficacy is associated with better emotional regulation skills. Students who believe in their ability to succeed are less likely to be overwhelmed by stress and anxiety, allowing them to maintain focus and concentration during studying and exams.

5. Resilience: Self-efficacious individuals are more resilient in the face of failure. Rather than interpreting setbacks as a reflection of their abilities, they see them as opportunities for growth and learning. This resilience enables them to bounce back from academic challenges stronger and more determined.

6. Positive Self-fulfilling Prophecy: Believing in one's ability to succeed can create a self-fulfilling prophecy. Students who have high self-efficacy are more likely to approach academic tasks with confidence and enthusiasm, which can lead to the actualization of their positive expectations.

7. Increased Academic Performance: Ultimately, students with high self-efficacy tend to perform better academically. Their belief in their ability to succeed drives them to set ambitious goals, work diligently towards achieving them, and persist in the face of challenges, resulting in improved academic outcomes.

To enhance self-efficacy in academic settings, educators and parents can provide constructive feedback, offer opportunities for mastery experiences, model confidence in students' abilities, and create a supportive learning environment that fosters autonomy and competence. Additionally, helping students develop self-awareness and challenging negative self-talk can empower them to cultivate a strong sense of self-efficacy, which can lead to great performance in academics and beyond

Teachers can enhance the level of student's efficacy through various feasible teaching techniques. Learners who have repeated experience of success have higher self-efficacy than those students who experience repeated failure. As a consequence, providing abundance of experiences and building positive beliefs in students to develop the sense of self efficacy.

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