

Self- Efficacy Assessment to Predict GPA Grade Scores of Students

Mazlan Ismail¹, Hajar Jani²

¹Senior Lecturer, Faculty of Sports Science and Recreation, Universiti Teknologi MARA, Negeri Sembilan, 70300, Malaysia

²Lecturer, Faculty of Business and Management, Universiti Teknologi MARA, Negeri Sembilan, 70300, Malaysia

Abstract: *This pilot study was to investigate self-efficacy of students' scores to predict GPA grade passing and failing performance before sitting for exams. The data was collected from 60 students (39 males, 21 females) from Sports Science degree undergraduates. Self- efficacy scale was developed to particularly measure GPA grades scores and to predict passing and failing scores performance of the students. The independent t-test indicated that no significant differences were seen in self-efficacy between males and females students. Pearson correlation showed a significant relationship where passing scores were higher than the failing scores. It was recommended that sports counseling students are interested in all subjects whether it involves physical or theoretical based course program. The same issues may be addressed in future research, but with improved measures such as a comparison between core and elective course programs.*

Keywords: self-efficacy, GPA grades, academic performance, course program, final exam

1. Introduction

Learning in a university is one reason to prepare individuals to enter the workforce and face different life challenges. Being a university student requires them to have a higher degree of determination, self-monitoring and initiative. Every university has its own system to monitor the students' academic performance. For instance, Student's Feedback On-Line (SuFO) is a system used to obtain feedback from students in a particular academic semester. SuFO functions as a mechanism to facilitate faculties, academics centers, and UiTM branch campuses in enhancing the quality of teaching and learning activities. SuFO contains students' perceptions on teaching and learning activities, lecturers' professionalism, course program attended and facilities. The expected outcome is to provide a benchmark for lectures to improve their teaching and learning activities as well as to provide feedback to the university.

Another online system used is the Entry and Exit surveys questionnaire which is completed by students during the start and end of any course program. Students fill up information on their current knowledge of the course in the entrance survey. Meanwhile, the exit surveys assess their understanding of the course once the course is completed. The question is can the system assess students GPA score in the course program they attended? Can SuFO and Entry and Exit Surveys online system actually reflect the performance of the lecturers when the academic performance (GPA score) is lower than the SuFO scores or Entry and Exit Surveys points?

Some courses are very popular in the faculty program. Students' receive a lot of knowledge and support from their lecturers hence they are able to score higher grade in the exam. However, do lectures really know their students capacity to score in the course that they teach? Previously, an attempt had been made to identify factors that are important

to the success of students by studying the relationship between numerous psychological and academic variables [1], [2], [3]. It is confirmed that significant factors on academic performance are intellectual capability and motivation [4]. For instance, previous study found various differences between male and female students' self-efficacy but no differences in academic performance [5]. Additionally, a significant relationship was found between the students' self-efficacy and academic performance. As pointed out by Bandura, to some extent attitude and gender influences some people despite their mediating effects on self-efficacy [4].

Previous researchers declared that environmental factors, social and multitude of personal, social and environmental factors play a role in changing a persons' self- efficacy and also future performance [6]. This is similarly supported by Bandura, Social- cognitive theory perspective [4]. In fact perceived self-efficacy predicts future achievement better than past performance [6], [7]. It is important to gauge students' self-belief or confidence and how it is related to their academic performance. Generally, a person who is suspicious of his or her own abilities tends to avoid challenges and difficult tasks [3]. In fact, they will avoid difficult tasks altogether [8].

Previous study used self- efficacy scale to assess the level of student's efficacy and academic performance [3], [9] [10]. The researchers have developed a self-efficacy questionnaire to assess a 15 week module program [10]. The study used an open-ended questionnaire to determine factors influencing students' success in a particular module. The self-efficacy approach is consistent with previous research [4]. It was proposed that participants should rate their confidence using a five-point scale [10]. Another qualitative study by [9] was conducted on 60 undergraduates' sports studies students and based from a 30-item questionnaire; six themes were identified by using the same approach as [10]. In six weeks, self-efficacy was completed by the participants before the

dissertation submission date. It is concluded from the findings that academic performance can be significantly predicted based on self-efficacy [9].

Numerous studies have been done on self-efficacy and academic performance but there was no adequate research to establish a clear connection between self-efficacy and GPA grades scores prediction prior to final exam. The objective of this study is to examine effects of students' self-efficacy towards GPA grade scores and to predict passing and failing performance before final exam. Students who showed high scores of self-efficacy judgments was expected to understand the whole chapters in the course program and vice versa. In particular, this study is interested in identifying students' self-efficacy a week before their final exam to predict pass and failing students.

2. Materials and Methods

The present study was conducted in Faculty of Sports Science, Universiti Teknologi MARA, Seremban campus. Self-efficacy GPA grade scale were given to students in the class on the specific day a week before the final exam. Sport Counseling course was assessed in this study. Sport Counseling course typically involves 8 counseling theories that need to be completed. Students need to know how the theories help patients in any circumstances. The Sport Counseling continuousness assessments include three assignments (i.e., case study, personal journal, personal counseling) and one presentation. The data was completed and collected in the class. The participants were informed about the purpose of the study and their right to withdraw at any time without penalty. Sixty students out of 63 were (Male; 39, Female; 21) ranging from ages 20 to 23 years ($M=21.15$, $SD=.40$). All the participants were Sports Science semester 4 students at the time of the study. GPA grades followed the standard examination procedure. The university marking system ranges from A to D. 1.00 to 1.99 GPA is the fail grade. 2.00 to 3.32 GPA represent satisfactory performance. Grades 3.33 to 4.00 represent an outstanding performance.

3. Measures

3.1 Self-efficacy GPA Grade

Self-efficacy is task specific or as a judgment about what a person thinks he or she can do [11]. However, a self-efficacy scale to measure a particular context cannot be used in other context. For the present study, the self-efficacy of students to score any course program needs to be assessed. The Grade Point Average (GPA) is an internationally recognized calculation used to find the average result of all grades achieved for students' course. Presently there is no self-efficacy scale available to measure course GPA grade efficacy before the final exam. Hence, a new measure of self-efficacy scale for any particular course or subject was developed following the guidelines suggested by Bandura [12]. This guideline includes domain specification, gradations of challenge, response scaling, content relevance, phrasing

and analysis of items, minimizing response bias, and validation.

Based on this scale, the measure was task-specific, hierarchically arranged to represent increasing levels of complexity [12]. The homogeneity of items for this scale is unnecessary because this scale is a hierarchical scale [13]. The measure started with the phrase "**Rate your confidence level that you believe you can get..... out of 4.00 GPA for this course**" the individual items were (I believe I can get 1.00 to 1.32 GPA D out of 4.00 GPA for this course, 1.33 to 1.66 GPA D+ out of 4.00 GPA for this course, and etc... The scale asked participants to record the strength of their confidence to scores in their course program before they sit for the final exam. Finally, the participants recorded the strength on a 100-point scale, from 0 (cannot do at all) 50 (moderately can do) and 100 (highly certain can do).

Prior to the actual study, the self-efficacy GPA grade scale were administered to 43 diploma students (semester 1) and all the participants were 18 years old. The pilot study was conducted in order to make sure that the reliability of the scale items was comprehensible to the participants. All the participants completed the self-efficacy GPA grade scale during researcher's visit to the class. The participants were randomly selected from seven different classes or courses. The pilot study indicated the Cronbach alpha coefficients to be .82 and no problems were encountered during this procedure. Internal consistency coefficients were acceptable for 1.00 to 1.32 GPA or D out of 4.00 GPA for this course ($\alpha = .79$), 1.33 to 1.66 GPA or D+ out of 4.00 GPA in this course ($\alpha = .78$), 1.67 to 1.99 GPA or C- out of 4.00 GPA in this course ($\alpha = .77$), 2.00 to 2.32 GPA or C out of 4.00 GPA in this course ($\alpha = .76$), 2.33 to 2.66 GPA or C+ out of 4.00 GPA in this course ($\alpha = .77$), 2.67 to 2.99 GPA or B- out of 4.00 GPA in this course ($\alpha = .77$), 3.00 to 3.32 GPA or B out of 4.00 GPA in this course ($\alpha = .80$), 3.33 to 3.66 GPA or B+ out of 4.00 GPA in this course ($\alpha = .81$), 3.67 to 3.99 GPA or A- out of 4.00 GPA in this course ($\alpha = .83$) and 4.00 or A out of 4.00 GPA in this course ($\alpha = .82$). In the current study, the Cronbach alpha coefficient was .73 and considered acceptable values [14].

4. Results

The aim of this study was to investigate students' self-efficacy towards GPA grade scores and to predict passing and failing performance before final exam among Sport Counseling students in UiTM Seremban. To achieve this objective, the participants responded to the items in the self-efficacy GPA grade scale. An independent-samples t-test was conducted to investigate the self-efficacy towards course program GPA Grades scores for males and females Sport Counseling students in UiTM Seremban. Preliminary assumption testing was conducted to check normality of the scores. The Shapiro-Wilk scores are normally distributed. Inspection of the shape of the histogram provides most scores on the dependent variables occurring in the centre. There was no significant difference in scores for males students ($M=373.51$, $SD=125.41$) and females students ($M=367.43$, $SD=116.01$; $t(58) = .28$, $p=.79$, two tailed). The magnitude

of the differences in the means (mean difference = 9.08, 95% CI: -57.15 to 75.32) was very large (eta squared = .56)

The second objective was to predict the association between passing and failing scores among UiTM Seremban Sport Counseling students. The relationship between prediction of passing scores and failing scores was investigated using Pearson Product –moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was a strong, positive correlation between the two variables, $r=35$, $n=60$, $p<.05$, with high levels of passing scores associated with lower level of failing scores.

5. Discussion

This study measured the levels of self-efficacy towards GPA grade scores and to predict passing and failing performance among Sports Counseling students before the final exam. Results showed there were no significance differences in male and female students. The results is consistent with previous studies where male and female students had no difference in self-efficacy scores [9]. In terms of Sport Counseling course, it is likely that a common approach among such individuals is to read and memorize all the theories, where else Sports Science students prefer to do physical activities. It is probable that poor results can be attributed to a lack of interest. The present study also found that the prediction of passing scores is higher than the failing scores among the Sport Counseling students. This finding suggests that identification of students who have low self-efficacy should be prioritized and those predicted to fail can be helped.

Bandura highlighted that verbal persuasion delivered by teachers often takes the form of verbal feedback, evaluation, and encouragement [8]. It has to come from a convincing source, which is genuine and realistic to be believed. The present study presented no difference between male and female self-efficacy towards GPA grades scores before they sit for the final exam. In fact, the findings showed prediction of passing scores were higher than the failing scores. However, it is very essential for the lecturers or teachers to improve their method of teaching particularly in development of the self-efficacy of the students. Therefore, students indirectly can improve the academic performance. As suggested by [15], educators and lecturers need to identify ways through which the self-efficacy of both male and female students can be improved to enhance academic performance. Even though there were no gender differences in self-efficacy in the present study for this Sport Counselling course, there may be differences in other subjects particularly in mathematical and sciences courses. However, the findings are only based on pre-exam prediction and not the final exam scores measured in the present study. The importance of self-efficacy assessment and its influence on course program GPA grades scores before the final exam needs to be considered seriously by lecturers and other competent individuals interested in student's wellbeing.

In conclusion, results of the present study indicate the importance of assessing self-efficacy of the students that

relate to the GPA scores before the final exam. The findings with no difference in self-efficacy between males and females Sport Counselling students toward GPA grade scores before the final exam still needs direct counselling attention, particularly when comparing the academic performance in the course program. However, the attention and focus should not only be towards the existing students but also on future students. From the findings, it was recommended that sports counseling students are interested in all subjects whether it involves physical or theoretical based course program. Despite several limitations, the findings of the study provide a first step towards the identification of the student's self-efficacy towards course program performance before they sit for the final exam. Future research might address the same issues, but with improved measures such as comparing between core and elective courses. Also, courses with difference numbers of continuous assessments in any course program and a larger representative population of UiTM students from different branches. The lecturer's performance can also be indirectly monitored if the students' self-belief towards his or her GPA grade scores is lower than the final exam scores.

References

- [1] Momanyi, M.J., O.Sh. Ogama, & Misigo, L.B. "Gender differences in self-efficacy and academic performance in science subjects among secondary school students in Lugari districts, Kenya". *Educational Journal of Behavioral Science*, 1, 62-77, 2010.
- [2] Peterson, C.H., Milstein, T., Chen, W.Y., & Nakazawa, M. "Self-efficacy in intercultural communication: the development and validation of a Sojourners scale". *Journal of international and intercultural communication*, 4, 290-309, 2011.
- [3] Shkullaku, R, "The relationship between self-efficacy and academic performance in the context of gender among Albanian students". *European Academic Research*, 1, 467-478, 2013.
- [4] Bandura, A. *Self-efficacy: The exercise of control*. New York: Freeman, 1997.
- [5] Pajares, F. Self-efficacy belief in academic settings. *Review of Educational Research*, 66, 543-578, 1996.
- [6] Chemers, M.M., Hu, L., & Garcia, B.F, "Academic self-efficacy and first –year college student performance and adjustment", *Journal of Educational Psychology*, 93, 55-64, 2001.
- [7] Miller, R.B., Greene, B.A., Montalvo, G.P., Ravindran, B., & Nichols, J.D, "Engagement in academic work: the role of learning goals, future consequences, pleasing others, and perceived ability. *Contemporary Educational Psychology*", 21, 388-422, 1996.
- [8] Bandura, A. *Social foundations of thought and action: a social cognitive theory*. Englewood Cliffs, NJ: Prentice – Hall, 1986.
- [9] Lane, A.M., Devonport, T.E., Milton, K.E. & Williams, L.C, "Self- efficacy and dissertation performance among sport students. *Journal of Hospitality, Leisure, Sport & Tourism Education*", 2, 59-66, 2003.
- [10] Lane, A., Hall, R., & Lane, "Development of a measure of self-efficacy specific to statistics courses in sport",

Journal of Hospitality, Leisure, Sport & Tourism Education, 1, 47-56, 2002.

- [11] Moritz, S.E., Feltz, D.L., Fahrbach, K.R., & Mack, D.E, "The relation of self-efficacy measures to sport performance: A Meta analytic review". Research Quarterly For Exercise and Sport, 71,280-294, 2000.
- [12] Bandura, A. Guide for creating self-efficacy scales. In F. Pajares & T.Urdan (Eds.), Self-Efficacy Belief of Adolescents (pp.307-337). Greenwich, CT: Information Age Publishing, 2006.
- [13] Feltz, D.L., Short, S.E., & Sullivan, P.J. Self-efficacy in sport; research and strategies for working with athletes, teams, and coaches. United States; Human Kinetics, 2008
- [14] Pallant, J. SPSS survival manual: A step by step guide to data analysis using SPSS. Crows Nest, Australia: Allen & Unwin, 2011.
- [15] Davidson, O., Feldman, D., & Margalit, M, "A focused intervention for 1-st year college students: promoting hope, sense of coherence and self-efficacy". Journal of Psychology, 146, 333-352, 2012

