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Investigating relationship between self-efficacy, achievement motivation, and self-regulated learning strategies of undergraduate Students: a study of integrated motivational models

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Abstract

Firstly, the main purpose of the present paper was to investigate the existing relationship between self-efficacy, achievement motivation, and self-regulated learning strategies of undergraduate students. Secondly, educational research that investigate the relationship between self-efficacy, achievement motivation, and self-regulated learning strategies applying the structural equation modeling (SEM) in Malaysia seems to be very limited. Hence, carrying out this research is essential for growing educational research to bridge the gap. Three hundred undergraduate students participated in the study using the Confirmatory Factor Analysis to answer the research Question: Is there any correlation between self-efficacy beliefs, achievement motivation, and self-regulated learning strategies of the UKM undergraduate students? Empirically, the CFA results indicated that there was a considerable correlation between self-efficacy beliefs, achievement motivation, and self-regulated learning strategies confirming the argument of literature review.

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Keywords: ; Relationship, Self-efficacy; Achievement Motivation; Self-regulated Learning strategies.

1. Introduction

It was widely believed that self-efficacy belief serves as core cause of human actions, it makes individuals believe in their own ability to execute a given task. The Self efficacy belief actively injects other factors of success such as motivation and self-regulation through cognitive function (Bandura 1986; Bandura and Locke 2003). The self-regulation governed by quite a few self-regulatory mechanisms which occupy a central regulatory function. The first mechanism is self-efficacy; the second mechanism is goals setting, while the third mechanism of self-regulation is affective self-evaluation which is about matching goals with desired efforts. The stronger the people's sense efficacy, the higher their goals setting and commitments (Bandura 1986; Bandura 1989; Bandura and Jouden 1991). Zimmerman (1989) argues that self-regulated learning has three influential elements, they are: commitment to academic goal, self efficacy, and learning strategies. Numerous research findings demonstrate a close relationship between students' self ability beliefs to execute learning tasks, motivation, and self-regulated learning strategies. The higher the sense of efficacy the greater strategy used and the achievement (Andrew and Vialle 1998; Bandura and Locke 2003; Pintrich and DeGroot 1990; Pintrich and Schrauben 1992; Shunk 1991; Wood and Bandura 1989;

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Young and Choi 2000). Generally, we may observe from the research findings that not only are self-efficacy beliefs mediating students' self-regulation, rather, studies on self-regulated learning emphasize the importance of goal setting as a significant element that critically influences the self-regulated learning functioning.

2. Methodology

Selected three hundred UKM undergraduate students participated in this study. The research questionnaires include four constructs; the self-efficacy (three dimensions), achievement motivation (three dimensions), and self-learning strategies (six dimensions). It is empirically important to examine the proposed measurement models separately before investigating them simultaneously; this allows us to obtain more reliable model fit (Hair et al. 1998).

3. Result

3.1 Separated model fit of the research

Separate Confirmatory Factor Analysis was conducted for each construct before merging them into one mode (Figure 1.1). However, some problematic items were removed before obtaining satisfactory model fit for each individual constructs. For example, CFA's fit indices satisfied that the self-efficacy hypothesized model fit the collected data well; the goodness-of-fit index (GFI) .95, the adjusted goodness-of-fit (AGFI) .92, the Tucker-Lewis Index (TLI) .96, the comparative fit index (CFI) .97, the root mean residual (RMR) .040, the Hoelter critical number (CN .05) 201, Hoelter critical number (CN.01) 229, the root mean square error of approximation (RMSEA) .060, and CMIN/DF 2.07 indicating that the minimum model fit was achieved (Barbara 2001; Pintrich et. al. 1991).

3.2 Integrated measurement models

The preliminary results of CFA statistical tests established that the individual hypothesized model of the study enjoys internal consistency correlation. These suggested the above separate evaluated 4 models to be combined into one single hypothesized model. Yet again, the confirmatory factor analysis method was used to explore good fit of the combined hypothesized model, namely, the self-efficacy (3 indicators), the achievement motivation (3 indicators), and the learning strategies (6 indicators). Table 1.1 demonstrated that the ration of chi-square value was less than 3 and with probability of $p \leq 0.001$. In addition, the root mean residual (RMR) .035, the root mean square error of approximation (RMSEA) .054, the goodness-of-fit index (GFI) .95, the adjusted goodness-of-fit (AGFI) .92, the Tucker-Lewis Index (TLI) .96, and the comparative fit index (CFI) .97. Results of the standardized regression indicators were also statistically significant at 0.001 proving the combined hypothesized model fulfilled to be valid, reliable, and tolerable integrated model (McQuitty 2004; Schreiber et. al. 2006).

Table 1.1 The combined hypothesized model fit indices

CIMNDF/ Chi-square	d.f.	P	GFI	AGFI	CFI	TLI	RMR	RMSEA	CN
1.880	51	0.001	.955	.926	.974	.964	.035	.054	217 & 246

According to figure 1.1, the covariance between indicators of the achievement motivation and the learning strategies were the highest values .84 followed by the covariance between the achievement motivation and the learning

strategies .82 while the covariance between the self-efficacy beliefs and the achievement motivation indicators was .80. The results of CFA’s fit indices suggested that the collected data fits the combined hypothesized model.

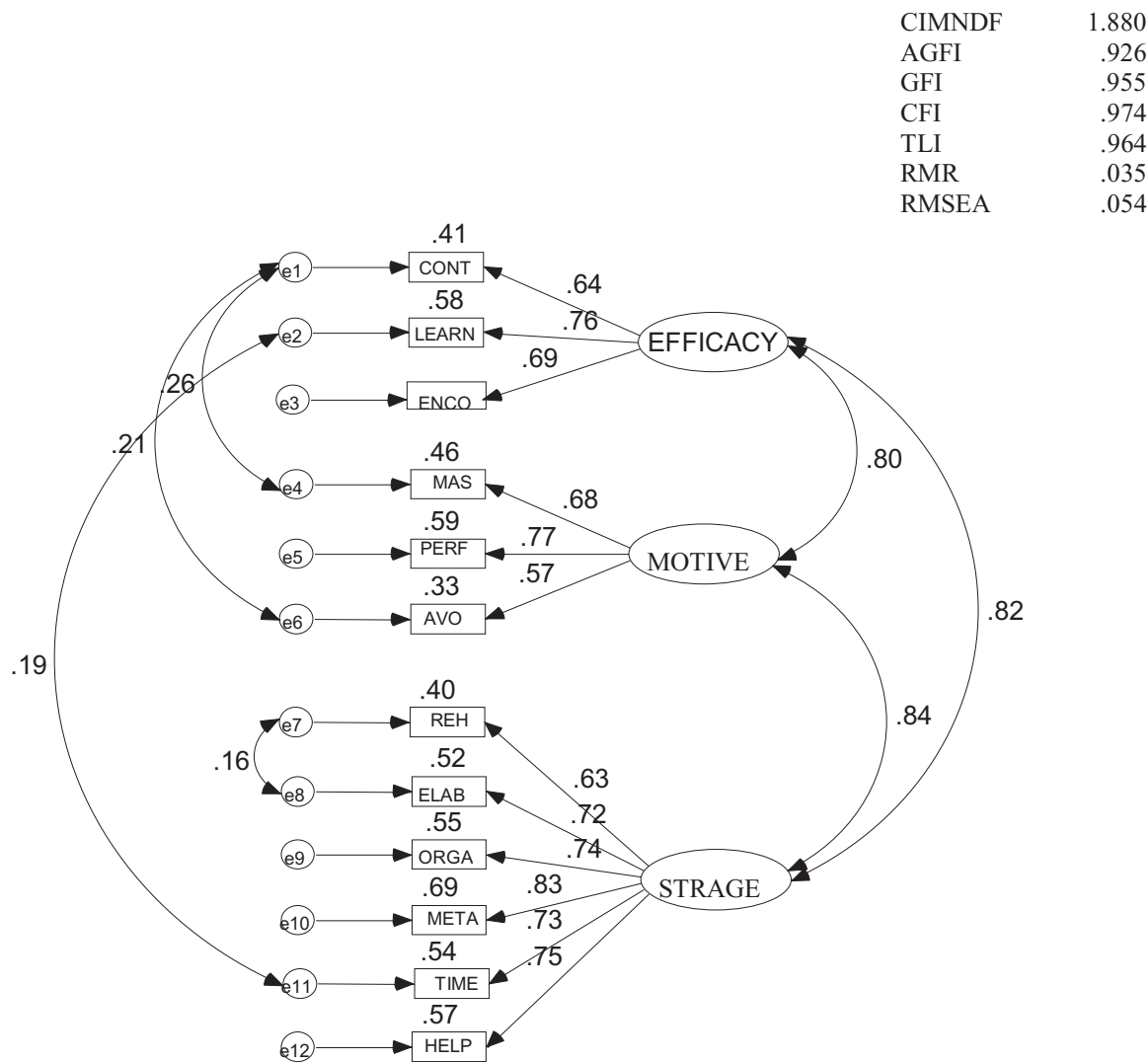


Figure 1.1 Combined measurement hypothesized model

Note. Keywords: EFFICACY= Self-efficacy, MOTIVE= Achievement Motivation, and STRAGE= Self-regulation Learning strategies.

4. Discussion and conclusion

Confirmatory Factor Analysis results demonstrated satisfactory statistical fits for the separated and combined measurement models of this research. The result shows acceptable goodness-of-fit for the correlations between the

research models supporting on-going research findings (Bandura 1986; Bandura and Locke 2003; Mahmud Bin Hj Abd Wahab 2009; Wood and Bandura 1989).

References

- Aid Suraya Md & Wan Zah Wan Ali. (2009). Metacognition and Motivation in Mathematical Problem Solving. 2009. *The International Journal of Learning*, 15, 121-132. <http://ijl.cgpublisher.com/product/pub.30/prod.1699>
- Andrew, S. & Vialle, W. 1998. Nursing Students' Self-efficacy, Self-regulated Learning and Academic Performance in Science. <http://www.aare.edu.au/98pap/and98319.htm>. (Retrieved: 15 OCT 2005).
- Bandura, A. 1977. Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Bandura, A. 1982. Self-efficacy mechanism in human agency. *American Psychologist*, 37, 122-147.
- Bandura, A. 1986. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. 1989. Human Agency in Social Cognitive Theory. *American Psychologists*, 44, 1175-1184.
- Bandura, A., 1989. Regulation of Cognitive Processes through Perceived Self-Efficacy. *Developmental Psychology*, 25, 729-735.
- Bandura, A., Conce, P., Claudio, B., Barbaranelli, C. 1999. Self-Efficacy Pathways to Childhood Depression. *Journal of Personality and Social Psychology*, 76, 258-269.
- Bandura, A. & Jourden, F. J. 1991. Self-Regulatory Mechanisms Governing the Impact of Social Comparison on Complex Decision Making. *Journal of Personality and Social Psychology*, 60, 941-951.
- Bandura, A. & Locke, E. A. 2003. Negative Self-Efficacy and Goal Effects. Revisited. *Journal of Applied Psychology*, 88, 87-99.
- Barbara, M. Byrne. 2001. *Structural Equation Modeling with AMOS Basic concepts, Applications, and programming*. London: Lawrence Erlbaum Association – Publisher.
- Holte, R. H. 1995. *Structural Equation Modeling*. Sage publication, Inc. Thousand Oaks, CA
- Hoelter, D. R. 1983 The analysis of covariance structures: Goodness-of-fit indices. *Sociological Methods and Research*, 11, 325–344.
- Hair, S. & Black, T. 1998. *Multivariate Data Analysis* (5th Ed). New Jersey: Hall PTR.
- Mahmud Bin Hj Abd Wahab. 2009. Study on the Impact of Motivation, Self-Efficacy and Learning Strategies of Faculty of Education Undergraduates Studying ICT Courses. *The 4th International Postgraduate Research Colloquium IPRC Proceedings*, 59-80 <http://bsris.swu.ac.th/iprc/4th/14.pdf> (3 October 2009)
- McQuitty, S. 2004. Statistical power and structural equation models in business research. *Journal of Business Research*, 57, 175-183.
- Pintrich, P. R. & DeGroot, E. V. 1990. Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82, 33-40.
- Pintrich, P. R. & Schrauben, B. 1992. Students motivational beliefs and their cognitive engagement in classroom academic tasks. In D.H. Schunk & J.L. Meece (Eds.). *Student perceptions in the classroom* (pp. 149-183). Hillsdale, NJ: Lawrence Erlbaum Associates
- Pintrich, R. P., Smith, D. A. F., Garcia, T. & McKeachie W.J. 1991. *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSQL)*. Ann Arbor: Michigan, 48, 109 - 125.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A. & King, J. 2006. Reporting Structural Equation Modeling and Confirmatory Factor Analysis Results: A Review. *The Journal of Educational Research*, 99, 323-337.
- Schunk, D. H. 1991. Self-efficacy and academic motivation. *Educational Psychologist*, 26, 207-231.
- Wood, R. & Bandura, A. 1989. Impact of Conceptions of Ability on Self-Regulatory Mechanisms and Complex Decision Making. *Journal of Personality and Social Psychology*, 56, 407-415.
- Wood, R. & Bandura, A. 1989. Social cognitive theory of organizational management. *Academy of Management Review*, 14, 361-384.
- Young-Ju Joo., Mimi Bong & Ha-Jeen Choi. 2000. Self-efficacy for self-regulated learning, academic self-efficacy, and Internet self-efficacy in web-based. *Educational Technology, Research and Development*, 48, 2-10
- Zimmerman, B. J. 1986. Becoming a self-regulated learner; which are the key subprocesses? *Contemporary Educational Psychology*, 11, 307-313.
- Zimmerman, B. J. 1989. A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, 81, 329–339.