

Effects of Gender as Moderator on the Relationships between Teachers' Competency and Achievement Motivation on Academics Performance in Malaysian Vocational Colleges

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Abstract - This study examined if teacher competency is significantly correlated with achievement motivation and students performance. It also explored the moderating effects of gender factors and their linked between teacher competency and achievement motivation as well as performance adjustment among vocational colleges students in Malaysia. Approximately 360 first year students (215 males and 145 females) of 13 vocational colleges participate in the study and were categorized based on two groups, male and female. Two valid and reliable instruments were used to assess student's perception on their teacher competency in classroom, students' achievement motivation and students' performance. Correlation and multi-group analysis using structural equation model were used to analyze these data. The result shows a significant relationship between teacher competency and of both students; achievement motivation and students' performance. In addition, the moderating effect of gender was found on the relationship between teacher competency with achievement motivation and students' performances were established.

Keywords -- Teacher Competency, Achievement Motivation, Students' Performance, Gender, Moderating Effects, Structural Equation Modeling

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I. INTRODUCTION

Gender differences in students' performance especially in academic fields have generated numerous studies examining students' demeanor in secondary schools. One of the reasons females overall outperform males is that females tend to put forth greater effort when compared males (Kessels, Heyder, Latsch, & Hannover, 2016). Males are less motivated than females and have less positive attitudes toward school (Allagnat et al., 2017). Females spend more time doing homework, display less disturbing behavior, and are less truant. Males take it easier, do not work as hard, and are distracted more easily (Allagnat et al., 2017; Davidson & Freudenburg, 1996). High academic effort or displaying other positive school attitudes appears antithetical to typical masculine behavior, which is a condition of popularity for males. Effortless achievement is characterized as the most masculine way of achieving (Kessels et al., 2016). Research has examined

possible nuances in these gender differences by disaggregating them along, for instance, race, social class, behavior and attitudes (Ahang, 2014; Jha & Nagar, 2015). However, few studies deal with the context in which males and females form their performance, such as the teachers or their own motivation's to learn. Yet, students' study involvement or willingness to exert effort might be related to features of their teacher's competencies in a classroom and own motivation. For instance, in the United Kingdom, males' and female' "laddishness" can be understood partly as a response to their fear of failing the high-stakes tests (Jackson, 2013). Similarly, many countries have a tradition of grouping students in secondary education according to their ability level. This ability grouping is organized in a myriad of ways such as tracking or streaming entailing entirely different curricula depending on students' ability group. These different tracks are commonly classified hierarchically, placing technical and vocational tracks at the bottom of the ladder (Samuel & Peter, 2013).

Since the late 1960s, research has established that lower-track students develop anti school attitudes to overcome the status deprivation resulting from being in a lower track (Van Houtte, 2017). Consequently, belonging to a higher track positively influences academic performance (Van Houtte, 2015). However, little research has investigated gender differences in effects of teachers' competency, achievement motivation and educational performance. This article investigates whether gender differences in students' performance, that is whether teachers' competency and achievement motivation influences males' and females' performance differently.

II. BACKGROUND OF STUDY

This section explains several concepts related to the current study, such as teachers' competency and achievement motivation; academic's performance; and, moderating effects of gender.

Teachers' Competency and Achievement Motivation

The need to strengthen competencies among the teachers in technical and vocational education was repeatedly emphasized by many scholars lately (Effendi, 2012; Jusoh & Idris, 2017;

Nurazimah & Yusri, 2013). A consistent recommendation made by scholars is the need in emphasis from teaching to learning, that was part of teacher competencies. The message is clear; what students learnt is greatly influence by how they learn. Many

student best learn through active, collaborative, team work in classroom or outside.

Therefore, teachers play important roles to contribute for the effectiveness of strategy. They have to become more skillful in pedagogical aspects, planning and did some preparation once they started the lessons (Muhammmad Aiman, Roziah, Mohd. Ashraff, & Muhd. Khaizer, 2017). Competitive classroom have particularly impeded opportunity among the students to participated equally. Teachers play a significant part in determining the successful in students' performance. It was demonstrated that teacher's attitude, knowledge and behavior especially in the classroom will influence the students' achievement (Nor Lisa, Kahirol, Mimi Mohaffyza, & Sern, 2015; Ridzwan et al., 2017).

Hence determination of the competencies among the teachers with respect to concern, knowledge and practices is essential in order to assess their preparedness in guiding and shaping the students to adopt excellence in skills or academic. There are also needs to have high quality teachers who are ready to impart high quality knowledge, skills competencies that are required in vocational technical education. This can be referred to a person who can teach Vocational and technical Education effectively. Teacher Education should aim at producing high quality teachers who are well equipped with variety and effective ways of teaching in and out of school setting (Khadijah, Rahim, & Abd Hair, 2013).

The McClelland Theory of Achievement Motivation has been used in this research. It was introduced by McClelland (1985) discussing about how important is motivation among the students especially in technical and vocational educational. Student's motives achieve in school are the joint of their own expectancies in academic and social support especially from teachers (McClelland, 1985). Motivation in turn is presumed to affect achievement related behavior and subsequent academic achievement. Development changes in relationships with teachers likely to influence students' motivation to learn better in a classroom (Wang & Eccles, 2013). Research has noted a drop among the students in vocational fields was because of the interpersonal relations with teachers (Abesha, 2012; Choosri, 2011; Feng, Fan, & Yang, 2013; Lee, 2010; Mohd. Rustam et al., 2014; Nor Lisa et al., 2015). These previous research suggest frequent significant deterioration in student-teacher relationships as a role model or sources of support.

Some evidence indicates that teacher's roles will encourage students and motivate that person to achieve more than she has ever created or achieved before, or to achieve more than any other person has created or achieved. This means that when a person already has a desire to outperform others, that person has the motivation to achieve (Mohd. Rustam et al., 2014). Motivation to achieve is a series of perceptions or desires that arise within a person who encourages himself to achieve more than what he has created or achieved before, or to achieve more than what others have created or achieved (Nasrin & Begum, 2013). Such

achievement motivation can be measured by one's efforts to excel in certain groups; one's ability to embrace challenges, rational success, and a job well-done; one's passion for job situations involving personal responsibility, feedback, and a medium level of risk; and one's ability to accept personal responsibility for success (Lee, 2010).

Academic's Performance

Learning performance links to the future career opportunities, especially, in the vocational education field (Mukhtar & Ahmad, 2015). Therefore, it is not surprising that the academic achievement of students is a top concern of educators. Academic achievement is often used to refer to the knowledge obtained by students through a school program or curriculum. According to Olanipekun & Garuba, (2016), academic achievement is defined as "the competence of a person in relation to a domain of knowledge" or the proficiency of students' performance in a certain course. Academic achievement problems have been focal points for educators and researchers for decades (Oluwasola, 2014; Ridzwan et al., 2017). Much of the previous academic achievement research has focused on the psychological mechanism (Mohd Effendi Ewan, Ahmad Zamri, & Nordin, 2015), self-efficacy (Samuel & Peter, 2013), and family factors such as parental response to grades are proven to contribute to academic achievement (Abesha, 2012).

Muhammmad Aiman et al., (2017) presented evidence that the use of autonomy-supportive techniques by teachers and school administrators has been associated with academic achievement. Lee, (2010) also provided evidence that achievement motivation may also contribute to students' achievement because it has a profound influence on their day-to-day behavior in school. For instance, Choosri, (2011) showed that students who were demotivated in learning subject matter had lower academic achievement scores than higher motivation students. Intense emotional arousal was predicted to interrupt the performance of work (Rotgans & Schmidt, 2012). If students have serious emotional exhaustion, they will be emotionally fatigued, used up irritable, frustrated, or even worn out, and caused lower academic performance. Cohen (1980) in his research, clearly showed that a person with higher stressors would show negative emotions and low work performance.

Moderating Effects of Gender

Studies exploring the relationship between teacher competency and achievement motivation to students' performance have produced mixed results. Although, some studies found positive relationship between those variables, other studies indicate the effect of individual differences as predictors for student's performance. Results showed that females have higher performance than females (Eze, Ezenwafor, & Obi, 2015; Wolters, Yu, & Pintrich, 1996). Along with the study, females were found

to be more successful than males in terms of academic achievement. As a whole, studies show that researchers pay less attention on the roles of teacher competency and achievement motivation. Exploratory studies in the past several years show that individual characteristics

(gender) have become targets of much empirical investigation as supported by Bullough, (2015). In which he stated that, as a group, female's demonstrated better performance than males. Later, it was sustain by other research that showed there is differences between males and females in the level of achievement in technical and vocational education fields (Mohd Effendi Ewan et al., 2015; Syed Jaafar, 2014). Likewise, researchers also discovered that genders do indicate significant differences between students. For example, Musa, Dauda, & Umar, (2016); and Zghidi & Loumi, (2016) found that female students have higher performance than males in both skills and academic. However, according to literature search, the ability of gender to moderate the relationship between independent variables and academic achievement has received minimum direct investigation. For example, the moderating effects of gender are mixed as what has been discovered in the research of student's success. Gender has been described as a factor that moderates the relationship between independence from parental involvement (Zhang, Haddad, Torres, & Chen, 2011). In addition, research by Erden, Aytac, & Erden (2016) examined the relationship between teacher competency, achievement motivation and gender. Specifically, their research instigate whether gender can moderate the relationship between teacher competency and achievement motivation, in which it was strongly supported by the result, and finding by Zghidi & Loumi, (2016) show that gender does moderate the relationship between teacher competency, motivation and academic achievement among students. Therefore, the literature has been used as a foundation to develop a conceptual framework for this study. This study also was primarily conducted to examine three major objectives: - first, relationship between teacher competency and achievement motivation with students' performance. Second, effect of gender as moderating variable on the relationship between teacher competency, achievement motivation and students' performance.

III. METHODOLOGY

Participants

This study was a quantitative correlation research. Questionnaires were the main data collection method has been used in this research. A permission to conduct the study was obtained from the Division of Research and Development (EPRD), Ministry of Education, Division of Technical and Vocational Education (BPTV) and subsequently from administrators of each vocational colleges involved. Participant consists of 360 students from 13

vocational colleges all around Malaysia. Samples were chosen by proportionated stratified sampling technique. There are 59% (n=215) are males and 41% (n=145) are females.

Data Collection

All participant completed the research surveys assessing their perception on teacher's competency and their own achievement motivation. All the data were collected through two instruments as follows:

- i. Teacher Competency (IKG) vp by (Nor Aniza, Siti Aishah, Lay Nee, & Nor Hashim, (2016) which consists of 94 items in four domains; planning and preparation (11 items), classroom climate (28 items), teaching (39 items) and professional responsibilities (20 items). It were obtained on five Likert-scales ranged from (1-strongly disagree to 6-strongly agree). For the current research, the reliability of coefficient teacher competency was indicated as very good and overall reliability ($\alpha = .969$).
- ii. Achievement Motivation by (Vallerand, 1992) which was consist of 28 items in three domains; intrinsic motivation (12 items), extrinsic motivation (12 items) and negative items for motivation (4 items). It were obtained on five Likert-scales ranged from (1-strongly disagree to 6-strongly agree). For the current research, the reliability of coefficient teacher competency was indicated as very good and overall reliability ($\alpha = .922$).

While to measure academic achievement, all the data were collected from Operation Unit, Technical and Vocational Education, Ministry of Education Malaysia.

VI. FINDINGS

The data were analyzed using correlation and regression analysis by the method of structural equation modeling. The correlational analysis was applied to test the assumption whether there is a statistical relationship between the variables of teacher competency and achievement motivation with students' performance. Hence, a multi-group analysis using structural equation modeling was used to test the moderating effect of gender and on the relationship between teacher competency with achievement motivation and students' performance. In the multi-group analysis the causal structure of both male and female were compared.

Direct Effects of Teacher Competency and Achievement Motivation

Models tested are displayed in figure 1 in which it is presented by the relationship between teacher competency and achievement motivation with students' performance. Hypotheses testing analysis was conducted to measure a direct relationships through Structural Equation Modeling (SEM) showed that 32 percent of R² value were determined by teacher competency and achievement motivation. There was a positive significant relationships between teacher competency and students' achievement ($\beta=.76$, $p<.001$) and achievement motivation showed there was a significant relationships between achievement motivation and students' achievement ($\beta=.46$, $p<.001$). While, there was a positive significant relationships between teacher competency and achievement motivation ($\beta=.67$, $p<.001$). The model indicated a good fit between the data and the model ($\chi^2/df= 3.299$; CFI=.962; TLI=.942; RMSEA=.080) (Hair et al. 1998; Kelloway, 1998; Kline, 1998).

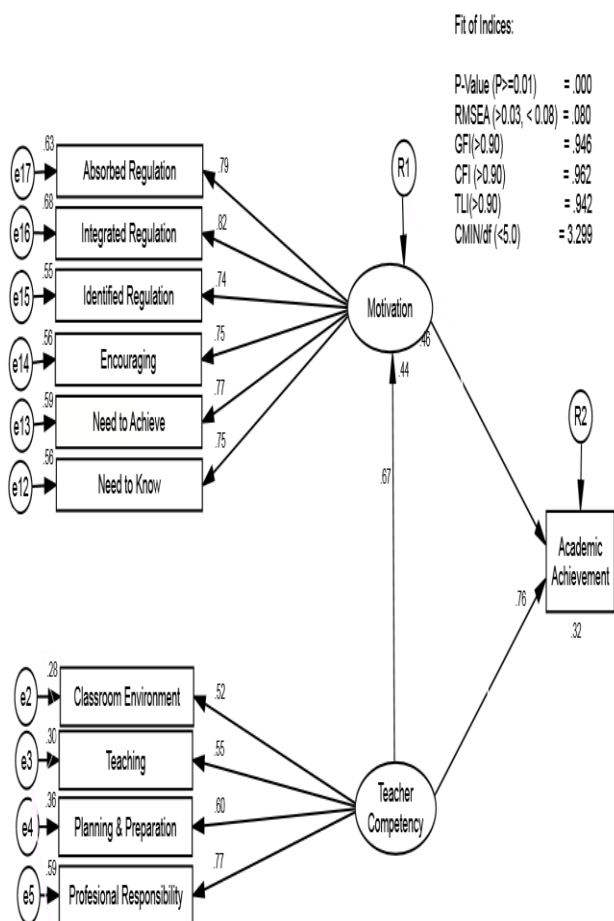


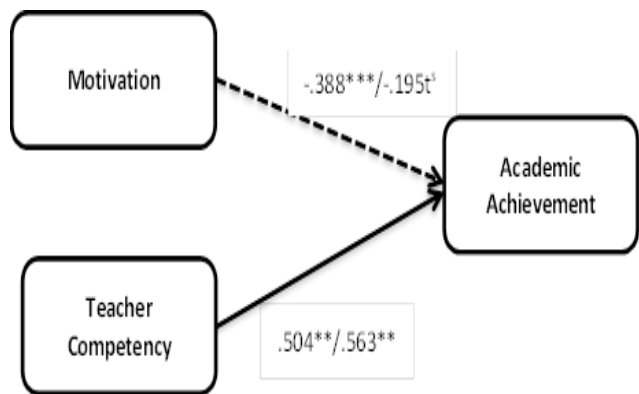
Figure 1: Results of hypotheses testing for direct relationships

Vocational Colleges Students' Performance

To determine the relationships of teacher competency and achievement motivation variables to the students' performance in vocational colleges, regression analyses was run through structural equation modeling analyses. The analyses for students' performance involved gender and the major independent variables which is teacher competency and achievement motivation. The independent variable in the analysis predicting students' performance by using the students' cumulative college GPA as the dependent variable. For this equation R was .32; the two predictors accounted for 44% of the variance. Findings from both equations predicting students' college performance are generally supportive the hypotheses, save for the lack of predictive power of the teacher competency and achievement motivation. It showed that is teacher competency and achievement motivation played important roles to students' performance in vocational colleges, Malaysia.

Moderating Effects of Hypotheses

To test the effects of moderating variables, multi-group structural equation modeling analysis was used. Figure 2 shows the tested model of gender. Hypothesis in relation to moderating effect of gender are tested by comparing path coefficients between two groups (male and female) by using t-value over 1.96 (over .95% confidences).



Notes:
Males (n=215), Females (n=145)
→ Significant relationships, ----- Insignificant relationships
p<.05, *p<.001

Figure 2: Moderating Effects of Genders

In order to test gender as a moderating variable, Figure 2 shows that gender does not significantly moderates the relationship between achievement motivation and students' performance ($\beta=-.388$, $p<.001$,

$\beta=-.195$, $p=.250$). Hence the finding that gender significantly moderate the relationship between teacher competency and students' performance ($\beta=.504$, $p<.001$, $\beta=.563$, $p<.001$). Therefore, the β value in females is higher compared to the males group. This concluded that, female academic achievements were better than male in this study.

TABLE 1: GOODNESS OF FIT INDICES FOR GENDER DIFFERENCES

Indicator	Acceptable Value	Goodness of Fit Indices		
		Separate Model		Merge Model
		Male	Female	Male and Female
χ^2		372.44	448.66	395.00
df		202	254	208
Absolute Fit Indices				
RMSEA	< .08	.049	.046	.047
Incremental Fit Indices				
CFI	> .90	.944	.936	.933
TLI	> .90	.925	.932	.929
Parsimony Fit Indices				
Chisq/df	< .50	1.844	1.766	1.795

Therefore, the comparison model showed that the model testing indicated good fit between the data in separate model and the merge model as displayed in Table 1. Goodness of fit indices for separate model for male is ($\chi^2/df=1.844$; CFI=.944; TLI=.925; and RMSEA=.049), female is ($\chi^2/df=1.766$; CFI=.936; TLI=.932; and RMSEA=.046) and merge model is ($\chi^2/df=1.795$; CFI=.933; TLI=.929; and RMSEA=.047).

VII. DISCUSSION

This research examined the relationship between teacher competency and achievement motivation with students' performance. The results showed that there are strong relationships between teacher competency with achievement motivation ($\beta=.67$, $p<.001$). This results supported with previous research showed that how important is teacher's roles to encourage student's motivation (Danielson, 2014). Teacher with high responsibility in their professionalism will give a good impression to students and built a good relationship between them. This statement was support with the research from Fox & Wilson, (2015) stated that teachers will easily teach students in very comfortable way when they get engaged together in a classroom. Good planning and preparation before starting lesson will give clear directions to students what they are going to learnt on that period of time (Mukhtar & Ahmad, 2015).

All the elements explained in teacher competency will increase students' motivation to learn better in a classroom. Same as the relationships between teacher competency also was significant with students' performance ($\beta=.76$, $p<.001$). Surprisingly, the relationships was strong and support the previous study that was done by Retnowati, Murdiyani,

Marsigit, Sugiman, & Mahmudi, (2018), they were demonstrated that teacher's pedagogical elements such as how they planned their lessons and teaching techniques was increased student's academic achievement especially in technic and vocational fields (Noor Erma & Eu, 2014).. Same goes to the relationships between achievement motivation with academic achievement ($\beta=.46$, $p<.001$). Since vocational student's need to be involve in skills job to achieve their performance, extrinsic motivations such as integrated regulation, absorbed regulation and identified regulation showed the higher factor loading compared to intrinsic motivations. Which is concluded that, the students were motivated by factors surrounding such as teachers to build up their confidence level and determination to finish up all the task given by teachers. Previous study by Guvenc, (2015) also indicates that motivational support provided by teachers has an effect on the students' motivation orientation and active class participation.

The major variables examined in the present study were highly related to academic achievement, especially when cumulative GPA was used as the dependent variable; 32% of the variance was accounted for in the prediction of cumulative GPA. As hypothesized, performance milestones teacher competency was consistently the strongest predictor of performance, and achievement motivation was also consistently related to students' performance. The findings from the SEM analyses that were anticipated higher and positive relationships of teacher competency and achievement motivation to students' performance. This findings support by Olanipekun & Garuba, (2016); Ridzwan et al., (2017); and Suarmika, (2018), showed that teacher play an important roles to encourages students motivation in order to contribute for their performance in academic and skills performance.

The present study also tested the moderating effects of gender on the relationship between teacher competency and students' performance as well as achievement motivation and academic achievement. The result suggested that gender is not an important moderating factor on the relationship between achievement motivation and academic achievement, but moderates the relationships between teacher competency with academic achievement. In other words, the findings supported that gender differences effect on academic achievement among the vocational colleges students in Malaysia. Which is stated that performance among the female students is stronger compared to the performance among the males students.

As indicated by the previous research Awan, Ghazala, & Anjum, (2011); Mallasi & Ainin, (2015); Musa, Dauda, & Umar, (2016); Rivers, Mullis, Fortner, & Mullis, (2012); and Zghidi & Loumi,(2016) stated that females students always scores in their academic achievement compared to males students. As we can see, even though the majority students in vocational colleges are males, but females still dominate the performance in education institution. The finding of few gender differences is consonant with previous research on highly selective groups of students such as these Bullough, (2015); and Eze, Ezenwafor, &

Obi, (2015) were reported that females students did report significantly higher positive outcome expectations. Overall, these findings support that the "institutional climate" and opportunities for female students' in traditionally male-dominated fields continue to be more favorable than they are for men in those fields. Despite the fact, previous studies were followed to develop this study framework and this research has some limitation. Initially, this research collected data using a stratified proportionated sampling, which researchers hinder the ability to generalize the results into a broader sample.

VIII. CONCLUSION

This current report provided a short discussion on the findings of moderating effects in relationships between teacher competency and achievement motivation with students' performance in this research. There were relationships between variables that have been measured and the model was achieved the goodness of fit indices. On the other hands, the model was contributed as an additional literature on gender differences, teacher competency and the body of knowledge on achievement motivation in the context of Malaysian education. However, further study should be conduct to improve the implementation of teacher competency especially when it was related to achievement motivation in order to increase the achievement among the vocational colleges.

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