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## *Full Length Research Paper*

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# Effects of metacognitive strategy and achievement motivation training on dissertation efficacy among doctoral students in Southwestern Nigerian universities

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Accepted 16 September, 2016

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The process of doing research dissertations are often fraught with inhibiting factors such as low dissertation efficacy which students experience during the process of executing their research studies. This study investigates the effects of metacognitive strategy and achievement motivation training on dissertation efficacy of doctoral students. It further ascertained the moderating influence of emotional intelligence and gender on relationship between the independent variables and the outcome measures. The study adopted pretest-posttest and control group experimental design. 84 doctoral students were randomly selected from three universities across the South West geo-political zone of Nigeria. Findings indicate a significant main effect of treatments on participants' dissertation efficacy while metacognitive strategy was more effective compared to Achievement motivation training and the Control group on measure of dissertation efficacy. However, there was no significant main effect of gender on dissertation efficacy. The interaction effects of treatment and emotional intelligence on dissertation efficacy were not significant. Likewise, three-way interaction effects of treatments, emotional intelligence and gender were not significant. Study recommends that doctoral students be exposed to the above type of training to facilitate timely completion of doctoral dissertations.

**Key words:** Achievement motivation, dissertation efficacy, emotional intelligence, metacognitive strategy.

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## INTRODUCTION

Dissertation writing and presentation is seen as an educational experience provided by the university system all over for postgraduate (doctoral) students which cannot in any way be underestimated. It is a traditional capstone of educational programmes (Hines, 2006), a culminating achievement in academia and a part of the rite of passage to independent scholarship which provides opportunity for the students to contribute to literature under the guidance of a superior and/or a professorial committee. The dissertation process enables students learn how to develop analytical mind premised on data

generated (Garcia, 2007).

Dissertation is perhaps the most important piece of work a student produces on completion of any doctoral programme. The systems of support, research strategies, work schedules, and writing techniques that help in the dissertation process are relevant tools in writing books, articles and lectures for many years to come as the candidate makes progress in academia. This perception has recognized the doctoral students as the most academically capable, most academically successful, most stringently evaluated, and most carefully selected in the entire higher education system (Golde, 2000).

As a key academic activity, dissertation has been a challenging experience for all students, because it is a major self-directed research project. According to Garcia

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(2007), it involves conducting research, and also a rigorous writing process. Completing a dissertation is an engaging and tough experience that requires academic skill, strength, perseverance, and focus. Besides, there are many pressures inherent in the research process for the dissertation which makes it inevitable that a certain number of students will not complete it (Grosjean, 1995). Studies (Adeyemo and Onongha, 2010, Griffin, n.d.; Lovitts and Nelson, 2002) have indicated that many registered doctoral students are either stuck at the dissertation process or withdrawn officially (though unofficially in most cases). They often complete the course but are unable to finish the dissertation. While some complete the dissertation process before due date, others do not and consequently, give up.

Dropout rate among doctoral students in Nigeria had been reported as above 50%. This presumption is premised on the statistics for enrolment and output of doctoral students in Nigerian universities between 1985 and 1989 (NUC, 1994) which revealed a staggering disparity between the two years. For instance, the data reveals that the 1985/86 academic session recorded a total enrolment of 10,021 postgraduate students, whereas the output was only 4,834 for the 1987/88 session when they were expected to graduate. This represented an output of 48% of total enrolment for 1987/88 session. In the same vein, the postgraduate output for the 1986/87 intakes was only 42.96% and declined in 1989/90 by about 8% with no session recording an output of 50%. More revealing was the observable disparity in doctoral output by discipline. There was a gradual decline in output, with the lowest record of 38.06% in the 1986/87 academic session. No discipline has made up to 50% output. This trend has continued in recent times and even appears to grow worse.

Several factors have been articulated for this high rate of attrition, unfortunately, these factors are not limited to particular fields but they cut across disciplines (Herzig, 2004). Studies indicate that barriers forestalling completing dissertations include those beyond the candidates control (external) such as challenges set by the learning environment (Kember, 1990), pressures from jobs, family or significant others, lack of support from the supervisor (or advisors), professorial committee, questionable support from an employer (Germeroth, 1990; Mallinckrodt and Leong, 1992). There are also within (internal) factors such as financial burdens, computer literacy, ability to access requisite technology, time management and self-judgment of their capabilities to organise and execute courses of action required to complete a dissertation (Adeyemo and Onongha, 2010; Golightly, 2007; Griffin, n.d; Varney, 2010). Prominent among dissertation internal inhibiting factors as observed in recent literature is the beliefs about personal capability (efficacy) of the candidates towards the dissertation process.

## Theory of self-efficacy

Self-efficacy is defined as the belief in one's capability to organize and execute courses of action required to produce desired attainments (Eccles and Wigfield, 2002). It is the judgments people make regarding their capabilities to organize and execute courses of action that are needed to achieve the selected performance. According to Bandura in his social cognitive theory, self-efficacy is a cognitive construct that describes a person's confidence in his/her ability to perform tasks. It is also much more specific to an assignment instead of a general idea of proficiency. A person with a strong feeling of efficacy strongly influences his or her personal achievement levels and comfort in many ways.

Self-efficacy has been shown by researchers to have an influence on a broad range of individual's cognition and behavior. Again, self-efficacy is associated with increased expectations and goals (Bandura, 2001), improved work-related performance (Stajkovic and Luthans, 1998), greater jobsearch activity (Eden and Aviram, 1993), good academic performance (Luszczynska et al., 2005), and health-related choices (Clark and Dodge, 1999; McAuley et al., 1994; Wulfert and Wan, 1993). Self-efficacy can be either task-specific, relate to many related tasks within a domain or be generalised. Self-efficacy theory is also a common theme in current views of motivation (Graham and Weiner, 1996), primarily because of its predictive power and application for practically and behavioural task.

Dissertation efficacy is influenced by cognitive interpretations of success and failure in tasks, and also influences effort, persistence and the cognitive resources that are used in seeking to interact with the academic context. Students make reliable differentiations between their self-efficacy judgments across different academic domains which, collectively, form a loose hierarchical multi-dimensional structure.

An important characteristic of self-efficacy is its level of specificity. At the broadest level, self-efficacy can be completely general (Sherer et al., 1982), referring to confidence about any and all tasks. At the narrowest level, self-efficacy refers to beliefs about one's confidence in completing a specific task successfully. However, as tasks are often interrelated by domain, self-efficacy can also refer to an individual's confidence in abilities that apply to several related tasks within a domain. This latter example is referred to as domain-specific self-efficacy.

People with great self-confidence in their capabilities approach complicated tasks as challenges to be mastered rather than as tasks to be avoided. Having a positive outlook and feeling of self-confidence helps to foster intrinsic interest and deep fixation in activities (Shannon, 2008). Individuals will set challenging goals for themselves and maintain a strong commitment to

achieving them. When faced with new challenges, these individuals will intensify and sustain their efforts in the face of failure. They are also able to quickly recover their sense of efficacy after failures or setbacks. These individuals will attribute failure to inadequate effort or insufficient knowledge and skills, which can be acquired (Bandura, 1994). In contrast, people who doubt their capabilities tend to withdraw from difficult tasks which they view as personal challenges. These individuals, often times, have low aspirations and a limited dedication to the goals they choose to pursue.

Individual with low dissertation efficacy, when faced with difficult tasks, often dwell on their personal deficiencies, on the obstacles they will encounter, and all kinds of adverse outcomes rather than concentrate on how to successfully achieve their goals. They usually give less than stellar level of effort and quickly give up in the face of adversity. They are slow to recover their sense of efficacy following failure or setbacks (Bandura, 1994).

Faghihi et al. (1999) observe that both students' research self-efficacy and their relationships with advisors and committee members significantly contributed to dissertation progress. At the same time, none of the student background characteristics had a significant effect on dissertation progress. Lane et al. (2003) also corroborated this through a correlational study on dissertation progress. They found that the composite score of self-efficacy correlated positively and significantly with dissertation progress. Likewise, Pressley (1996), in a study of first-year African-American doctoral students, found students' positive views of themselves may relate to the successful completion of the doctorate, while students' negative views of themselves may relate to withdrawal. No significant difference was reported between completers and non-completers with respect to self-concept.

In his later work on self-efficacy, Bandura (1997) acknowledged the powerful findings relating self-efficacy beliefs and educational performance. He opined that, academic efficacy development has personal accomplishments, vicarious experience, performance feedback and emotional arousal as the sources of its development. Performance accomplishments are based on an individual's history of performances/experiences with a given task (Bandura, 1997; Lane and Kyprianou, 2004; Lindley and Borgen, 2002). Pajares (2002) submits that the most influential source of academic self-efficacy beliefs is the interpreted result of one's performance. Performance accomplishments are the most influential sources of efficacy information, as they provide the most authentic evidence of an individual's ability to successfully complete a task. However, Rust (2002) notes a disproportionately low self-belief with some students from non-traditional backgrounds at the undergraduate dissertation.

The vicarious experience acquired through dissertation advisors and mentors-perhaps a lecturer who came our

way at just the right time--helps instill self-beliefs that influence the course and direction our lives take. The ability to relate to a similar person also influences students' self-efficacy. Seeing others perform threatening activities without adverse consequences can generate expectations in observers that they too will improve if they intensify and persist in their efforts. Individuals persuade themselves that if others can do it, they should be able to achieve at least some improvement in performance. Thus, vicarious experiences are those in which an individual observes another successfully perform a given task. Bandura (1997) defines these observations as modelled behaviour. According to Schunk (2003), modelling refers to emulating one's thoughts, beliefs, actions, strategies and behaviours after those demonstrated by models. Modelling takes place when observers display new behaviours that prior to modelling had no probability of occurrence, even if the observers were motivated to accomplish such behaviours (Bandura, 1986b). There are three main factors that create good models; age and expertness, similarity between models and observers and the difficulty of tasks to be performed (Bandura, 1997).

The third influence on self-efficacy is referred to as performance feedback which is termed verbal persuasion by Bandura. Verbal persuasion can be described as a source of efficacy information by which an individual is led to believe he/she can successfully complete tasks in a specific domain through verbal suggestion. In companies with prior achievement, the social persuasion students get from self and significant others in the form of motivation (implicit and explicit) is a considerable impact on students' academic efficacy (Wigfield et al., 2004). Karl et al. (1993) shows that students' self-efficacy has significantly greater increases when they receive feedback.

The last influence on efficacy development is the physiological arousal and emotional manifestations that involve the stress reactions (such as sweating, trembling, and increased heart rate), negative emotional proclivities and misinterpretations of physical states (Bandura, 1994). Emotional arousal can be described as the level of anxiety one experiences when performing behaviours in a given domain. Bandura (1997) posits that stress provoking experiences and demanding situations elicit emotional arousal that might inform an individual concerning his/her competency to complete a given task. Moderate levels of emotional arousal are posited to lead to great self-efficacy. People rely on their state of emotional arousal to judge their ability to complete a task (Bandura, 1986a). Students' experience of negative physical or emotional symptoms that are believed to have originated from stress may attribute to a decrease in self-efficacy. Similarly, when students' feel less stressful or anxiety from academic demands, they may have an increase in self-efficacy (Schunk, 2004).

The implication of the influences of dissertation efficacy

beliefs towards completing a dissertation emphasizes the need for students to be assisted to possess strong belief in their capabilities to accomplish the dissertation process through skill acquisition. Studies have suggested that superior learners have various learning strategies at achieving academic success, while poor learners do not have proper strategies or have difficulties in using the strategies (Kim, 1999).

### **Metacognition and metacognitive strategies**

As a concept, metacognition is a noteworthy concept in cognitive theory. It was introduced by Flavell (1979) to signify self-knowledge of one's cognition. Metacognition variously refers to the study of memory-monitoring and self-regulation, meta-reasoning, consciousness (awareness) and auto-consciousness (self-awareness). In practice, these capacities are used to regulate one's own cognition, to maximize one's potential to think, learn and evaluate proper ethical rules. According to Oxford (1990), metacognitive strategies help learners manage themselves as learners, the general learning process and specific learning tasks.

O'Malley and Chamot (1990) presented metacognitive strategies as behaviors that individuals use to help them comprehend, learn, or retain new information. The essential elements in learning metacognitive skills involve skill, will and self-regulation (Weinstein and Meyer, 1994). Where skill learning is involved, there is relatively complex learning which is developed over long periods of time (Cornford, 2002). As a result, learners have to be conscious of what they are doing and manage their adopted strategies suitably for different tasks (Razi, 2014).

Metacognitive skills of planning, monitoring and evaluating require great ability in abstract reasoning which is essential to dissertation process (Schraw, 1998). Metacognitive strategies may be summarised as higher order executive skills which enables students approach learning in a systematic, efficient and effective way by using the elements of planning, monitoring and evaluating. Metacognitive skills involve the conscious structuring of knowledge which is likely to be more developed in areas of greater knowledge. Learning may be enhanced when instruction provides explicit content knowledge while asking students to use metacognitive skills to operate on that knowledge (Bransford et al., 1986; Perkins, 1987).

Kuhn and Dean (2004) affirm that metacognitive strategies are important tasks organisers that enable planning, setting goals, initiating work, sustaining future-oriented problem solving activities, monitoring and managing progress on tasks to detect and correct errors, and keeping track of the effect of one's behaviour on others. Metacognitive skills focus upon the actual, basic skill learning processes used and controlled by the individual learner. This is why metacognitive learning

strategies are often referred to more generally as learning-to-learn skills. When made explicit, they move beyond process potentially to a learned skill capacity that can be retained for life. Metacognitive strategies equip students with the tools to monitor and improve their understanding of new learning. Students who are proficient in applying metacognitive strategies outperform their peers with poor metacognitive skills.

Conversely, learners who have developed their metacognitive awareness are likely to become autonomous learners (Hauck, 2005). Likewise, Chamot (2005) and Goh (2002) points out that few learners who do not have the metacognitive knowledge need to select appropriate strategies and that learners' metacognitive awareness is related to effective learning in all learning contexts. Among all the preferred cognitive oriented strategies, metacognitive strategies are considered as the most essential ones in developing learners' skills (Anderson, 1991) and it was emphasised by O'Malley et al. (1985) that learners without metacognitive approaches have no direction or ability to monitor their progress, accomplishments and future learning directions.

Kruger and Dunning (1999) found evidence that addressing metacognitive processes such as strategy use and checking behaviours increased college students' ability to perform well on varying tasks. Further, if students are examined in terms of differences in high and low achievement, metacognitive training does have positive benefits, although, greater benefits seem to occur for low-achieving groups.

Pintrich and De Groot (1990) report a correlation between global academic self-efficacy and cognitive strategy use and self-regulation through use of metacognitive strategies. In addition, academic self-efficacy correlated with academic performances such as semester and final year grades, in-class seat work and homework, exams and quizzes and essays and reports. They report that perceived importance of academic achievement is associated with the outcome variables but is not a significant predictor. In another study by Kramarski and Mevarech (2003), students exposed to Metacognitive training outperformed others on the mathematical reasoning among 384 eighth-grade students. They report that students exposed to metacognitive instruction in either cooperative or individualized learning environments outperformed other students with respect to the ability to interpret graphs, fluency and flexibility of correct mathematical explanations, use of logical arguments to support math reasoning, performance on transfer tasks, and level of domain-specific metacognitive knowledge, such as strategies for representing math concepts in multiple ways and specific mathematical strategies for interpreting graphs.

### **Achievement motivation training and self-efficacy**

Individuals will satisfy their needs through different

means as they are driven to succeed for varying reasons both internally and externally. Achievement motivation has been described as the need for success or the attainment of excellence. Achievement motivation is based on reaching success and achieving all of our aspirations in life (Rabideau, 2005).

Achievement motivation training refers to the process of developing motivating individuals towards achievement in performing a specific task. The goal is to increase their motivation to want to achieve greater things for themselves or an organisation. This can involve actions like attempting to find out what makes the individuals think. In achievement motivation training, participants are given guidance on how to think, talk and act like a person with high achievement and then examine carefully the extent to which they want to plan their lives in the immediate future (McClelland, 1972). McClelland (1961) contends that an individual's thoughts are related to his/her actions. Articulating a particular motive such as achievement, association or influence has a tendency to increase the frequency of thoughts on that motive. If a particular motive gets more attention in the form of discussion, the network of associations formed in the mind will have the effect of facilitating learning (Elias and Wan Rafael, 1994).

Achievement motivation training lay special emphasis on achievement thinking. According to the achievement motivation theory, how an individual thinks affects, to a certain extent, his/her future undertakings. Further, the expectancies and motives which surface in one's thinking also affect his/her future propositions and actions. Wolters (2004) in a study investigated how different components of intrinsic motivation were related to each other and to students' motivation, cognitive engagement and academic achievement. Results of Wolter's study imply that it is possible to improve the academic achievement of students by enhancing motivational orientations in them.

Achievement motivation interventions that focused on improving self-efficacy have proven to be successful (Betz and Schifano, 2000; Gist et al., 1989). In addition, the researchers equally focused more generally on academic performance and persistence, studies have also supported significant associations between self-efficacy beliefs and various specific tasks related to academic and intellectual success. Lizzio and Wilson (2004) in a research study observe positive links between perceptions of the relevance of skills and motivation for further learning. Findings of a longitudinal study by Jungert (2009) indicate that students' perceptions of their opportunities to influence their study conditions interact with their motivation, self-efficacy and approaches to studying. Students who have high self-efficacy beliefs develop more strategies to influence their study environment. Also, students who perceive great opportunities to influence their study conditions adopt certain approaches to their studies and become more

motivated. These interactions are reflected in their approaches to studying and are important in the graduates' process of transition to work. The present study was conducted in order to improve the dissertation efficacy of doctoral students through instructions on metacognitive strategy and achievement motivation training.

The following null hypotheses were tested.

- i.) There will be no significant main effect of treatments on the dissertation efficacy of the participants.
- ii.) There will be no significant main effect of gender on the dissertation efficacy of the participants.
- iii.) There will be no significant main effect of emotional intelligence on dissertation efficacy of the participants.
- iv.) There will be no significant interaction effect of treatment, gender and emotional intelligence on the dissertation efficacy of the participants.

## METHODOLOGY

This study adopted the pre-test post-test control group type. The population for this study was doctoral students in Nigerian universities. Three institutions were randomly selected and assigned into experimental groups one, two and control respectively. A total of 84 second year doctoral students were selected from the three institutions – 45males and 39 females. The study had Metacognitive strategy and achievement motivation training as its independent variable.

The dependent variable was the students' doctoral efficacy while the moderator variables were students' gender and emotional intelligence. Two instruments were used for the study.

i.) Dissertation Self-efficacy Scale (DSS) was designed by Lane et al. (2003). It is a scale comprising 30 items identified meaningful competencies towards completing a dissertation. These competencies were used to develop a self-efficacy measure specific to the dissertation. It had reliability co-efficient of .88.

ii.) Emotional Intelligence Scale (EIS) also referred to as The Schutte Self-report Emotional Intelligence Test (SSEIT) was developed by Schutte, Maluff, Haggerty, Cooper, Golden and Dornheim (1998) to assess emotional intelligence based on self-report responses of respondents. It is a method of measuring general Emotional Intelligence (EI), using four sub-scales: emotion perception, utilizing emotions, managing self-relevant emotions, managing others' emotions. The instrument has 33 items appraising emotions in self and others, regulation of emotions in self and others, utilization of emotions in solving problems. The reliability co-efficient of the instrument is 78.

### Training procedure

Each participant attended eight sessions that were completed within 2-months (8-week) time frame on a weekly basis. Each session took about 60–90 min. The sequence of metacognitive strategies training was taken as follows: session one involves general orientation and administration of pre-test instruments; Session two- Preparing and Planning for Dissertation; Session three: Metacognitive strategy and the dissertation process; Session four- Metacognitive Self-Regulation; Session five- Metacognitive strategies: problem-solving, critical thinking and mindfulness; Session six - Monitoring self and strategy use: self-evaluation, self- consequence and reflective judgment; Session seven - Managing stress; and Session eight- Review and administration of post-test instruments.

Achievement Motivation Training Sequence also involves: Session one - General Orientation and Administration of pre-test instruments; Session two - Dissertation Process and Completion; Session three - Achievement Motivation and the Dissertation Process; Session four - Achievement Thinking; Session five - Personal Goals and Goal-setting; Session six - Developing a personal action plan; Session seven- Handling Emotions and Stress; and Session eight- Review and administration of post-test instruments.

Data generated from the study were classified as pre-test and post-test scores for experimental and control groups. ANCOVA was used to analyse the post-test scores using the pre-test scores as covariates.

Table 1 shows there is a significant main effect of treatment on dissertation efficacy [ $F_{(2,65)} = 35.47, p < 0.05$ ]. This means there is a significant difference in the mean of dissertation efficacy scores of participants in the experimental groups and those in the control. Hence, the null hypothesis is rejected. The Multiple Classification Analysis (MCA) as presented in Table 2 was used to determine the magnitude, direction of the difference as well as the contribution of treatment to the explanation of the participants' dissertation efficacy.

**Hypothesis 1:** There was a significant main effect of treatments dissertation efficacy of the participants.

Table 1 presents a summary of ANCOVA results for tests between subjects' effects with post-test dissertation efficacy score as dependent variable. After significant adjustment by the covariate post-test, dissertation efficacy varied significantly with treatment [ $F_{(2,65)} = 35.47, p < 0.05$ , partial eta squared = 0.63. This implies that treatment accounted for 63% of the observed variance in the post-test dissertation efficacy. Comparison of the adjusted group means presented in the participants who were exposed to Metacognitive Strategy ( $\bar{x} = 109.60$ ) performed better than those in Achievement Motivation Training group ( $\bar{x} = 103.80$ ) and the control group ( $\bar{x} = 91.37$ ). To this end, Metacognitive strategy was effective

in enhancing dissertation efficacy than AMT and the control group.

The first hypothesis for the study states there will be no significant main effect of treatments on the dissertation efficacy of the participants. The result shows there is a significant main effect of treatment (metacognitive strategy and achievement motivation training, AMT) on the dissertation self-efficacy of the participants (doctoral students). Thus, the first hypothesis is rejected. A major factor that may have aided the enhanced dissertation self-efficacy of the experimental groups could be the participants' exposure to skills of interrelated set of competencies for learning and thinking. They include many of the skills required for active learning, critical thinking, reflective judgment, problem solving, decision-making, goal setting, developing personal action plan and achievement thinking.

The rejection of the first hypothesis which underscores the effectiveness of treatment on dissertation self-efficacy of participants confirms the findings of Zimmerman and Schunk (2001) that students who have been taught metacognitive skills learn better than students who have not been taught these skills. The treatment prompted a high level of independence, self-regulation and a high degree of cognitive process of thinking necessary in the dissertation process. This finding indicates that increased self-confidence and a sense of personal responsibility are instilled through metacognitive strategy and AMT. The treatment package stimulated motivation for learning and also produced better learners. The finding supports the works of Butler (1993), Mace et al. (2001), McCombs and Marzano (1990), Pressley and Ghatala (1990), Schunk (1990) and Schmidt and Ford (2003).

Prominent among the objectives of this study is to enhance the dissertation self-efficacy of doctoral students in order to reduce the number of drop out among doctoral candidates. It was presumed that if doctoral candidates are given trainings that focus on confidence/eligibility derived from past success, verbal persuasion and emotional arousal, all of which are the elements of self-efficacy and achievement motivation, they will persist and complete the dissertation process in good time. The effectiveness of the treatment has also affirmed the discovery of Golightly (2007), Hines (2006) and Hines (2008).

Achievement motivation interventions of the study also focused on improving self-efficacy of the participants. The result from this study is in conformity with the findings of Betz and Schifano (2000) and Gist et al. (1989). In addition, Lizzio and Wilson (2004) found positive links between perceptions of the relevance of skills and motivation for further learning.

High dissertation self-efficacy indicates that students must possess the right perceptions of how available opportunities to influence their study conditions could interact with their motivation, confidence and approaches to studying. Students who have high self-efficacy beliefs

**Table 1.** Analysis of covariance (ANCOVA) of pre-post-test interactive effects of dissertation efficacy of Doctoral students in the groups.

Source	Sum of Square	DF	Mean Squares	F	Significant	Remark
Covariates	175.54	1	175.54	2.01	0.16	NS
Main Effects	7821.12	4	1564.22	17.28	0.000	
Treatment groups	6423.03	2	3211.52	35.47	0.000	Sig
EI Levels	1381.17	2	690.59	7.63	0.001	Sig
Gender	16.92	1	16.92	0.19	0.667	NS
2-Way interactions	1211.38	8	151.42	1.67	0.122	
Treatment x EI	542.99	4	135.75	1.50	0.213	NS
Treatment x Gender	393.93	2	196.96	2.18	0.122	NS
EI x Gender	67.08	1	33.54	0.38	0.692	NS
3-Way Interactions	237.79	4	59.45	0.66	.624	NS
Explained	9445.82	18	524.77	5.80	0.000	
Residual	6377.46	65	90.54			
Total	15330.67	83	184.71			

\* Significant at the p 0.05

**Table 2.** Multiple Classification Analysis (MCA) of Participants by Treatment, Emotional Intelligence and Gender

Grand Mean = 101.67

Variable + Category	N	Unadjusted Deviation	Eta	Adjusted for independents +Covariate Deviation	Beta
Treatment					
MS	27	8.11		7.93	
AMT	30	3.50		2.13	
Control	27	-12.00		-10.30	
			0.63		0.55
EI Levels					
Low	25	- 8.35		- 5.61	
Medium	26	- 0 .28		- 0.99	
High	33	6.55		5.03	
			0.11		0.04
Gender					
Male	45	1.33		.52	
Female	39	-1.54		-.61	
			0.45		0.33
Multiple R Squared					0.522
Multiple					0.722

MS=Metacognitive Strategy  
AMT=Achievement Motivation

develop more strategies to influence their study environment. These interactions are not only reflected in their approaches to studying but are also important in the graduates' process of transition to work as affirmed in the work of Pinquart et al. (2003). The study further enabled the participants to appreciate the need for them to be conscious of various opportunities to influence their learning, determine pace of work and environment towards early dissertation completion as observed in the longitudinal study by Jungert (2009).

The social dimension of dissertation process requires a high level of emotional intelligence. Since the doctoral

students cannot avoid relating with others such as colleagues, academic advisor (supervisor), librarians, typists and others, they need to be emotionally intelligent. The treatment incorporated training on emotional intelligence (EI) which enabled the participants know how to understand their emotions and that of others who may directly or indirectly influence their dissertation processes. The treatments also encouraged the need to interact with competent people who could help raise their confidence level. Findings from this study therefore, lend credence to Bandura's (1977, 1997) proposition that self-efficacy develops through socially constructed learning

experiences.

**Hypothesis 2:** There was no significant main effect of gender on the dissertation efficacy of the participants.

Table 1 shows that after significant adjustment by the covariate of pre-test dissertation efficacy score, post-test score did not vary significantly  $F_{(1,65)} = 0.19$ ,  $P=0.667$ , eta squared 0.45. The implication is that gender had no contribution to the observed variance in the post-test dissertation efficacy. From Table 2, the adjusted mean score for male participants is 102.19 while the female had adjusted mean score of 101.06. The difference is 1.13. Hypothesis 2 was therefore, not rejected meaning that gender did not significantly affect participants' dissertation efficacy.

This result corroborates the findings of Iskender (2009), Mueller and Dato-On, (2007); Schaefer's (1993); Sequeira et al. (2005) and Zhao et al. (2005) on the lack of significant statistical differences in self-efficacy among the genders. According to Marra and Bogue (2006) and O'Hare (1995), women usually embark on doctoral programme with high dissertation efficacy and self-esteem within the first two years.

This finding is quite understandable as the treatments fortified the dissertation efficacy of the female participants through collaboration as a measure to ensure that there is no decline. Vandergriff's (2003) affirms that metacognitive strategies enhances collaboration among learners, findings of this study reveals that students trained in the use of metacognitive strategies were more focused on the advantages of collaborating with a partner for monitoring, and the confidence-building function of this approach for development.

Meanwhile, this study is not in support of the general view that females have lower self-efficacy in academic activities. It is also believed in some cultures that females are weaker compared to their male counterparts in academic-related issues. The culture prevailing in the candidate's environment have been attributed to be responsible for the observed differences in the level of observed self-efficacy between genders. Notably, general opinion states that society will always present individuals holding positive belief about themselves thereby encouraging accomplishment of specific tasks towards their goals notwithstanding the gender involved.

Also, the result is not in support of the findings of Zeldin and Pajares (2000); Hutchison et al. (2005) and AL-Kfaween (2010) that established that significant difference exists in the self-efficacy level of university students. The significant difference according to Bradburn (1995) is partially due to differences in negative persuasion (e.g. statements indicating that women cannot do certain things) and anxiety signals. But it is also reported that no matter the statistical differences observed, when the self-efficacy differences were eliminated through verbal persuasion, gender differences in attrition were also eliminated (Bradburn, 1995). It is

imperative to acknowledge the role verbal persuasion plays in influencing human behaviour and motivation. It is the most widely used and a readily available source of efficacy information (Bandura, 1977, 1997). Several persons report being affected by motivational speeches which increase their beliefs that they are capable of successfully putting up behaviours in supervision and training of graduate students (Bernard and Goodyear, 2004).

**Hypothesis 3:** There was a significant main effect of EI on dissertation efficacy of the participants.

Statistically, the result as presented in Table 1 shows there is a significant main effect of EI on dissertation efficacy of the participants. The adjusted by the covariate of EI [ $F_{(1,65)} = 7.63$ ,  $p = .001$ , eta squared=.11; implying that EI contributed 0.01 of the variance observed in the post-test dissertation efficacy index. Hypothesis 3 is therefore, rejected. The observed significant main effect is in agreement with the findings of Abisamra (2000); Parker et al. (2001, 2002) and Adeyemo (2007) that EI has significant relationship with academic achievement. This result further reiterates the finding of Adeyemo and Onongha (2010) that various emotional and social competencies are strong predictors of academic success.

The treatment packages exposed participants to ways of managing emotions in the dissertation process without emphasis on the academic capabilities of the participants. They were encouraged to rather focus on improving their self-confidence as they undergo the dissertation process without succumbing to negative emotions. The result of this hypothesis supports the finding of Lankisch (2007) that university students who completed an emotion-management programme reported slightly increased emotional intelligence scores and persisted from the spring to autumn semester when compared to students who did not complete the programme. Again, it is also predicated on the fact that cognitive abilities had been reported to be more closely related to emotional intelligence ability (Brackett and Mayer, 2003; Lopes et al., 2003; O'Connor and Little, 2003).

This study negates the findings of Barchard (2003); Brackett and Mayer (2003); Lam and Kirby (2002); Newsome et al. (2000) and Vander et al. (2002) which found that EI did not correlate with cognitive ability and academic performance. Factors that may be responsible for this result may include the correlational design of the study and the category of participants adopted. This is supported by the fact that EI is hypothesised to develop with age and experience; therefore, the low scores in this sample of doctoral students could be expected.

**Hypothesis 4:** There was no significant interaction effect of treatment, gender and EI on the dissertation efficacy of participants.

Table 1 shows that the interaction effect of treatment,

gender and EI on the dissertation efficacy of the participants is not significant. [ $F_{(12,73)} = 0.66, p = 0.624, \eta^2 = 0.45$ ]. Therefore, the null hypothesis 4 is accepted. Findings of this hypothesis show no significant interaction effect of treatment, gender and EI on the dissertation efficacy of participants. In other words, the combination of treatment (comprising metacognitive strategy and AMT), gender and EI are not associated with the participants' dissertation efficacy. Since there is no significant interaction of the three variables, it means the observed non-significant main effect is valid for the group of participants.

The results corroborates those findings of Iskender (2009); Mueller and Dato-On, (2007); Shaefers (1993); Sequeira, et al (2005) and Zhao, Seibert and Hills, (2005) revealing lack of significant statistical differences in self-efficacy among the genders and the work of Newsome et al. (2000) and Vander Zee, Thyis and Schakel (2002) showing that EI did not correlate with cognitive ability and academic performance.

## Conclusion

The study was designed to improve dissertation efficacy of doctoral students through acquisition of cognitive skills that will empower students to self-motivate towards the completion of doctoral programmes in Nigerian universities. The treatment packages were effective in enhancing the dissertation efficacy of doctoral students. The study examined, creates self-awareness and enhanced the self-confidence of doctoral students in universities that have a high patronage of postgraduate students in the Southwestern Nigeria. It is possible that by addressing such concerns, the 50% dropout rate among doctoral students nationwide could be reduced significantly.

The present study offers new and important strategies on how dissertation efficacy of doctoral students can be influenced positively towards timely completion. Results from the present study indicated that the dissertation process (with high rate of attrition) which has been fraught with low self-efficacy among doctoral students could be successfully completed with acquisition of cognitive skills.

## Recommendation

It is recommended that faculty and decision makers in the university system focus their attention on perceived dissertation challenges faced by doctoral students in their efforts to improve self-confidence (and improve their overall health and wellbeing), as efforts to increase dissertation efficacy and self-esteem. University administrators should be aware that timely dissertation completion is an academic culture that should be

promoted and sustained.

Accordingly, it is recommended that orientation seminars and workshops should be carefully planned and organised for doctoral students in a bid to enlighten and stimulate them towards self and time-management. Each faculty and department with doctoral students in any university running PhD programme should also plan and organise trainings for both lecturers and students on the application of metacognitive strategies and achievement motivation techniques. This will enhance healthy interaction between students and advisors which is vital to the success of the dissertation process while it lasts.

Counseling services in the university should not be limited to undergraduate students but also extended to postgraduate students. The university counseling centres should be staffed with capable and qualified personnel in the area of educational psychology and counseling psychology. These Counselors must be empowered with relevant skills through exposures to trainings in metacognitive strategies and achievement motivation with the main objective of enhancing students' self-efficacy. This will simultaneously enhance academic self-efficacy and reduction of anxiety that most doctoral students encounter in the dissertation process.

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