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Effect of Micro-Teaching on Students' Performance during Off-Campus Teaching Practice: A Partial Least Square-Structural Equation Modelling (Pls-Sem) Analysis

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Abstract

The art and science of teaching as linked to the systems theory of input and output model shows that, in the 21st century, teacher education programmes should not only focus on the output of the student-teacher but more importantly the inputs. It is based on this that Smart-PLS was used to model a relationship between pedagogical skills, subject matter knowledge, personal disposition and performance in OCTP using 101 economics education major students from the University of Cape Coast. The study revealed that students' performance during OCTP is highly influenced by pedagogical skills, subject matter knowledge and personal disposition which were the direct paths in the model. The implication of this finding on teacher education is to modify the course on methodology to incorporate these three variables rather than the over-emphasis on pedagogy.

Keywords: *Micro-teaching, Pedagogical Skills, Personal Disposition, Partial Least Square (PLS), Structural Equation Modeling (SEM), Economics Education.*

Introduction

Microteaching started in 1961 at Stanford University (USA). Before microteaching, the demonstration lesson was used at Stanford until 1961. The demonstration lesson involves a student presenting a lesson to a small group of fellow students while the rest of the class looks on. From the

beginning, the demonstration lesson had shortcomings and it developed in such a way that eventually it resulted in microteaching, as it was called for the first time in 1963 (Allen & Ryan, 1969).

The major goal of a successful teacher-training programme is to expose prospective teachers to effective teaching strategies and experiences. The place of microteaching in teacher education programmes has been examined for a number of years by researchers in different parts of the globe (Fernandez, 2010; Lu, 2010; Ogeyik, 2009, Seferoglu, 2006; Subramaniam, 2006; Amobi, 2005; Akalin, 2005; Higgins & Nicholl, 2003; Wilkinson, 1996). During the 1960s, microteaching was first introduced in a teacher education programme in Stanford University to prepare students and get them ready for their clinical experiences (Cruickshank et al., 1996). Since its introduction in the 1960s, the practice of microteaching has rapidly expanded to other teacher education programmes. According to Fernandez (2010), Bell (2007) and Amobi, (2005), many pre-service teacher education programmes have introduced the microteaching component in order to orient prospective teachers and provide them with practical teaching experiences. The endorsement of microteaching as a tool for learning the art of teaching attracted a number of educators and researchers to investigate its impact on prospective teachers' teaching experiences and how they perceive it as a practical learning tool.

In the view of Görgen (2003), microteaching is a remarkable factor used in teaching practices of pre-service teachers. Microteaching method offers new and different opportunities to pre-service teachers about the planning and implementation of new teaching strategies. Microteaching has an important place in preparation for the teaching profession because of its potential to emphasize the relationship between theory and practice (Ajayi-Dopemu & Talabi, 1986). Çelik (2001) posits that microteaching is a technique in teacher education which provides a transition from theory to real teaching situations. Allen and Eve (1968) defined microteaching as "a system of controlled practice that makes it

possible to concentrate on specific teaching behaviour and to practice teaching under controlled conditions". Microteaching is one of the efforts by the pre-service teachers to transfer the knowledge and skills into action, and thus, they try to bridge the gap between theory and practice (Gürses, Bayrak, Yalçın, Açıkyıldız & Doğar, 2005). The foregoing then connote that micro teaching provides a basis for potential teachers to develop skill in using different teaching techniques in a contrived classroom situation. Undoubtedly, microteaching has become an integral part of teacher training.

Microteaching in the University of Cape Coast

The University of Cape Coast formerly known as University College of Education, Cape Coast was set up to train teachers for the education sector of the country. This teacher training duty of the University is carried out by the College of Education Studies, specifically the Teaching Practice Unit. The College of Education Studies in its quest to give trainee teachers a taste of what they are being trained to do, has a teaching practice unit which coordinates both on-campus and off-campus teaching practice for training teachers. During the third year of their study, all education students are supposed to register for an on-campus teaching practice for the second semester. This is meant to adequately prepare them for the off-campus teaching practice which is now a semester programme in the university. It is believed that, during on-campus, teacher trainees are guided by their peers and supervisors to shape their pedagogical ability, subject matter knowledge and personal disposition (Acquah & Anti, 2014).

However, in the fourth year, all education students are required to undertake a three months internship in a school of their choice during the first semester to put into practice all the skills acquired (pedagogy, subject-matter knowledge and personal disposition) during their training as teachers. These skills which are acquired by the teacher trainee during the on-campus are supposed to guide him/her to perform well during the three months off-campus teaching practice. The economics education student is no exception from what all the

education students go through in terms of on-campus and off-campus teaching practice.

Theoretical Bases for the Model

The study is based on the Systems theory of input-output model advanced by Ludwig Von Bertalanffy in 1956. Ryan (1966) defines a system as "a set of objects or elements in interaction to achieve a specific goal." The function of any system is to convert or process energy, information, or materials into a product or outcome for use within the system, or outside of the system (the environment) or both. Indeed, if a system is to survive, it must save some of the outcome or product to maintain the system.

The selection of the model is based on the belief that, the quality of input invariably affects the quality of output in this case, performance during off-campus (Acato 2006). Thus, we cannot lose sight of the fact that during the on-campus teaching practice, students are supposed to acquire and shape their pedagogical skills, subject-matter knowledge and personal disposition as economics teachers in the senior high schools. These are skills which the teacher trainee imbibes during on-campus teaching practices and is supposed to put them into practice during Off-Campus Teaching Practice (OCTP) in order to perform well. This study therefore, set out to look at the inter-relationship between these variables; Pedagogical skills, subject-matter knowledge and personal disposition (which are classified as inputs in this model) and its impact on the students performance in Off-Campus Teaching Practice (OCTP).

Pedagogical Skills

Pedagogy is the science and art of education, specifically instructional theory. Although pedagogy is sometimes seen as a nebulous concept, it is essentially a combination of knowledge and skills required for effective teaching (Johnson, 2006). The more traditional definitions describe pedagogy as either the science/theory or art/practice of teaching that makes a difference in the intellectual and social development of students (Johnson, 2006). More specifically, new research is defining pedagogy as "a highly complex blend of theoretical understanding and practical skill" (Lovat, 2003, p.11).

This research is highlighting the vast complexity of teachers' work and specifying just what the nature of that work truly is. As Lovat further emphasizes, a teacher is "a highly developed autonomous professional, with a requisite professional knowledge base and practitioner skills which could stand alongside the equivalent in medicine, law and engineering" (Lovat, 2003, p.11).

In other words, good pedagogy requires a broad repertoire of strategies and sustained attention to what produces student learning in a specific content domain, with a given group of students and a particular teacher. Thus, accomplished teaching "emanates neither from sheer knowledge of a subject nor from sheer teaching craft...." The notions of 'authentic pedagogy' (Newmann, 1996), 'quality pedagogy' (Darling-Hammond, 1997) and 'productive pedagogies' (QSRLS 1999) have all arisen in the last few years out of the need to identify that essential blend of knowledge and skills required for effective teaching which culminate to good performance from the teacher.

There has always been an assumption that student teachers will be able to transfer the pedagogical theories and approaches they learned in universities to their future classes in schools (Kubukcu, 2010; Fernandez and Robinson, 2007; Johnson, 2006). This is so because; they are taken through the methodology of teaching their respective subjects. Also, they are taken through micro-teaching (on-campus teaching practice) which some researchers believe enables student teachers to improve pedagogical skills in presentation and participation or to increase the range of behaviours (Mayhew, 1982).

The import of this is that, microteaching focuses on the act of teaching which enables student teachers to test their pedagogical skills in assimilated teaching context. The following null hypothesis was therefore formulated to guide the study.

H_0: Pedagogical skills acquired through micro teaching does not influence the performance of trainee economics teachers in off-campus teaching practice.

Subject Matter Knowledge

According to NBPTS (1999), effective teachers "have a rich understanding of the subjects they teach and appreciate how knowledge in their subject is created, organised, linked to other disciplines and applied to real-world settings. While faithfully representing the collective wisdom of our culture and upholding the value of disciplinary knowledge, they also develop the critical and analytical capacities of their students" (p. 3-4). This indicates that an effective teacher should have control of the subject matter he/she is teaching.

Researchers at the University of Pittsburgh, (Leinhart & Greeno, 1986; Leinhart & Smith, 1985) for instance, have found that knowledge of the subject is very important to teaching, and Lampert (1988) uses lack of subject matter knowledge to interpret findings from a study by Good, Grouws, and Ebmeier (1983) in which the researchers tried to train teachers to implement a variety of practices known to be associated with gains in student achievement. Teachers were able to learn all of the behaviours but one: explaining and demonstrating concepts for students. Lampert suggests that training teachers in the pedagogical behaviour of "explaining" cannot succeed if teachers do not adequately understand the content they are supposed to explain. Similar conclusions follow from a study by Steinberg, Haymore, and Marks (1985) and Carlsen (1987), who found that quality of teaching varied with the quality of the teacher's understanding of the content being taught. Individual teachers often changed their pedagogy when they moved from one subject to another they were more or less familiar with.

These three aspects of subjects, thus, the content of the subject, the organization of the content, and the methods of inquiry used within the subject could be construed as the core aspects of subject matter knowledge. A student teacher is supposed to develop and polish his/her subject matter knowledge during the on-campus teaching practice before they go out for their off-campus teaching practice. Simmons (1993) proposed that "in order to teach well the teacher needs to know about the subject matter in both width and depth to a degree unlikely to be found amongst those beginning a teacher training course"

(p. 9). A more recent study conducted by Lumadi and Acquah (2014) on students' perspective on the effectiveness of trainee teachers revealed that intellectual quality was one of the key elements that directly influenced students' ratings.

H_0: There is no significant relationship between subject matter knowledge acquired during micro teaching and performance of trainee economics teachers in off-campus teaching practice.

Personal Disposition

The National Council for Accreditation in Teacher Education (NCATE) Online Glossary has defines teachers' personal dispositions as the values, commitments, and professional ethics that influence behaviours toward students, families, colleagues, and communities and affect student learning, motivation and development as well as the educator's own professional growth. To the Council, dispositions are guided by beliefs and attitudes related to values such as caring, fairness, honesty, responsibility and social justice. For example, they might include a belief that all students can learn, a vision of high and challenging standards, or a commitment to a safe and supportive learning environment.

These traits are supposed to be developed by the student teacher during the on-campus teaching practice. Others also claim microteaching can create awareness among student teachers of the values, assumptions and attitudes that inform their practice. Sadiq (2011) highlights the fact that microteaching is more beneficial for pre-service teachers because they are more receptive to feedback and that microteaching encourages self-evaluation. These feedbacks are meant to shape the teachers personal disposition and make him/her a better teacher in the future.

Sadker and Cooper (1972) believe in the importance of microteaching in creating greater awareness on teachers' behaviour. Among them are specific personal habits and mannerism, teaching acts and techniques, activities and interrelationships of children in the classroom, problems of structuring and pacing in the classroom and effective acquisition of alternative

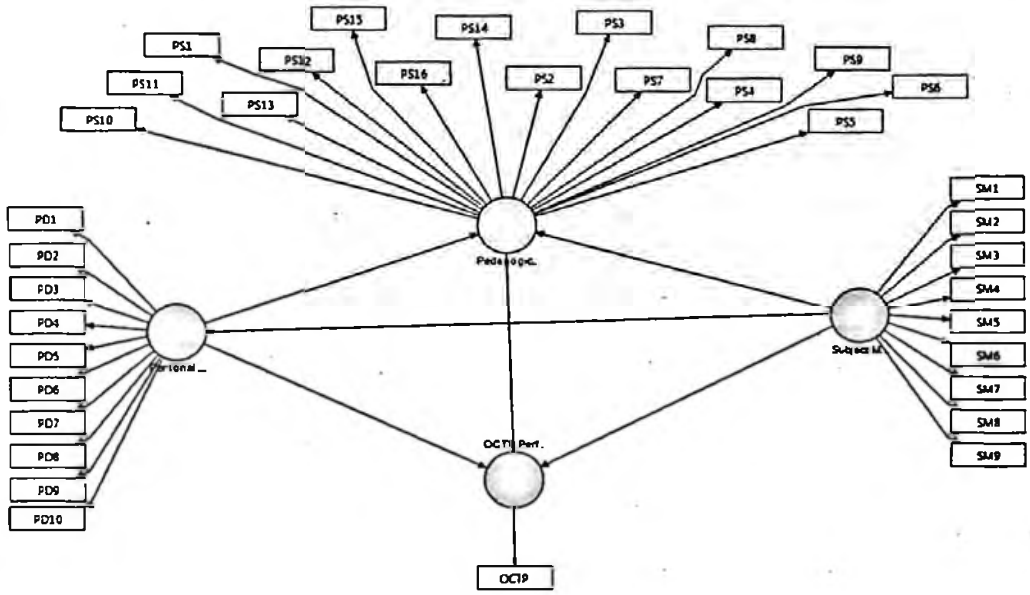
teaching patterns. Chang (1972) conducted a similar study looking at student teachers' reaction to microteaching. The findings indicated interesting relationships between the number of hours of teaching, preparation for microteaching and anxiety. It was found that the more student teachers taught, the less time they spent preparing for microteaching and the more student teachers practiced, the less they felt anxious. The findings also showed that as practice time increased, anxiety decreased.

H_0: There is no significant relationship between personal disposition acquired during micro teaching and performance of trainee economics teachers in off-campus teaching practice.

Performance in Off-Campus Teaching Practice (OCTP)

In educational institutions, success is measured by academic performance, or how well a student meets standards set out by local government and the institution itself (Ward, Stoker & Murray-Ward, 1996). Academic performance is used by various faculties as a method to determine which students are displaying the appropriate level of competence as defined by academic standards. It is also used by students to ascertain their academic progression; whether they are passing or failing in any specific areas (Shumway & Harden, 2003). In this case, supervisors for the OCTP observe teacher trainees during the off-campus period and assess their performance by scoring them on a scale of 1 – 5. This they do by observing specific competences which are supposed to be exhibited by the teacher trainee and believed to have been acquired during the on-campus teaching practice.

Invariably, in our view, we believe that for a student to perform well during OCTP, such student should be in the position to exhibit good pedagogical skills, show grasp of the subject-matter in this case economics and display a high level of professional attributes. Thus, there should be an inter-relationship between these three variables and when they are put into play very well; the teacher trainee will perform well in OCTP. Figure 1: is the measurement model of the study.



In this model, four interrelated Latent Variables (LV) are introduced. It is based on the systems theory of input-output model and it is to be applicable to the teaching learning situation in the classroom. For an economics teacher trainee to perform well, there should be the interplay of his/her subject matter knowledge, personal disposition and pedagogical skills. These three latent variables interrelate with each other during the instructional period. When all these inputs are well exhibited by the economics teacher trainee, there is the likelihood that the outcome of his/her performance during off-campus will be very good. The OCTP performance model is described in Fig. 1. A set of Manifest Variables (MV) are associated with each of the LVs. This structure is called the **OCTP Performance Model**. The entire model is important for determining the main target variable, being Performance during OCTP.

Method

Participants

Target population was the B.Ed. (Social Science) students of the University of Cape Coast with a major in economics. The total sample was 101 economics education major students.

The level 400 students were used because they have undertaken both their on-campus and off-campus micro-teaching.

Procedure

PLS was developed by Wold as a general method for the estimation of path models involving latent constructs indirectly measured by multiple indicators (Wold, 1982). PLS models are formally defined by two sets of linear equations called the *inner model* and the *outer model*. The inner model specifies the relationships between unobserved or latent variables (LVs), and the outer model specifies the relationships between LVs and their associated observed or manifest variables (Mvs).

The PLS procedure and the accompanying set of assumptions constitute the theoretical or structural form of PLS models. The LVs, the inner model coefficients, and the loadings are of course unknown and were all estimated using Smart-PLS. The PLS estimation procedure proceeds in two basic steps. The first step involves the iterative estimation of LVs as linear composites of their associated MVs. The second step involves the non-iterative estimation of inner model and outer model coefficients.

Operationalization of the Variables

The variables used for this study are defined and used as follows:

Latent Variable		Manifest Variable
Pedagogical Skills	PS1	Introduce my lessons by making it interesting and captivating
	PS2	Introduce my lessons by linking it to appropriate previous knowledge
	PS3	use appropriate teaching methods and strategies
	PS4	be clear and logical in lesson delivery
	PS5	Use good pacing and timing during lesson delivery
	PS6	competently use of adequate and appropriate TLRs
	PS7	involving students in lesson verbally and non-verbally
	PS8	Competently handle students' questions and contributions
	PS9	End my lessons by making the summary interesting and linked to objectives of the lesson
	PS10	Evaluate my lessons alongside lesson objectives
	PS11	Control the class during the instructional period
	PS12	Manage and organize the classroom individually or in groups during lesson delivery
	PS13	Establish effective communication with learners
	PS14	Use reinforcement techniques more effectively
	PS15	Use questions more effectively in teaching
	PS16	Use a variety of teaching methods to facilitate learning
Subject Matter Knowledge	SM1	Appreciate the basic economic principles
	SM2	Relate the content of economics to everyday life situations of students
	SM3	Explain the fundamental concepts of economics
	SM4	Acquire basic economic concepts, principles and tools for economic analysis
	SM5	Use practical illustrations to explain economic concepts
	SM6	Develop the ability to analyze various economic issues
	SM7	Develop self-confidence in my knowledge of economics concepts
	SM8	Breakdown economic issues to the level of understanding of students

	SM9	Link economics to other subjects which are related to economics
Personal Disposition	PD1	Grow my self confidence in a classroom environment
	PD2	develop organizational skills through lesson planning, selection, and preparation
	PD3	demonstrate flexibility in modifying ideas, course assignments, materials, plans, lesson implementation, and schedule changes
	PD4	communicate effectively through well organized and clearly expressed ideas in spoken or written language
	PD5	appreciate and value diversity through choosing and creating inclusive materials and supportive classrooms
	PD6	collaborate with peers, instructors, school personnel and parents;
	PD7	demonstrate sensitivity to others' feelings, opinions, and cultures
	PD8	be well-groomed and demonstrate an understanding of appropriate, professional dress codes
	PD9	display positive, professional attitude and enthusiasm for planning; initiating and engaging in school activities
	PD10	respect and support ethical and professional standards, diplomacy, integrity, and commitment

Data Analysis

All variables were inspected for skewness and kurtosis and no problems were observed. Then, descriptive analyses were conducted to gather information about the means, standard deviations, and inter-correlations of the model variables. In this study, direct pathways and indirect pathways were tested in one model. We examined whether pedagogical skills, subject matter knowledge and personal disposition impact on students performance during OCTP. The results of these analyses were then used to verify the existence of the relations within the model and to build the final model.

Results

A two level analysis was carried out. The first analysis dealt with the descriptive statistics of the measurement items and examined the reliability and validity of the measure used in this study. The second analysis

tested the proposed research model which consisted of assessing the contribution and significance of the path coefficients.

Table 1: Descriptive Statistics of the Constructs

Constructs	Mean	SD
Personal Disposition	4.09	.19
Pedagogical Skills	4.22	.08
Subject Matter	4.38	.11

From Table 1, it can be observed that the mean values of all the constructs used for the OCTP Performance Model recorded a mean value of above 4.0 ranging from 4.09 to 4.38. This show that majority of the respondents agreed/strongly agreed to the constructs that were used for the study. The standard deviations recorded further showed that, the responses obtained from the respondents were clustered around the means scores.

Assessment of the Measurement Model

Table 2: Check for Unidimensionality

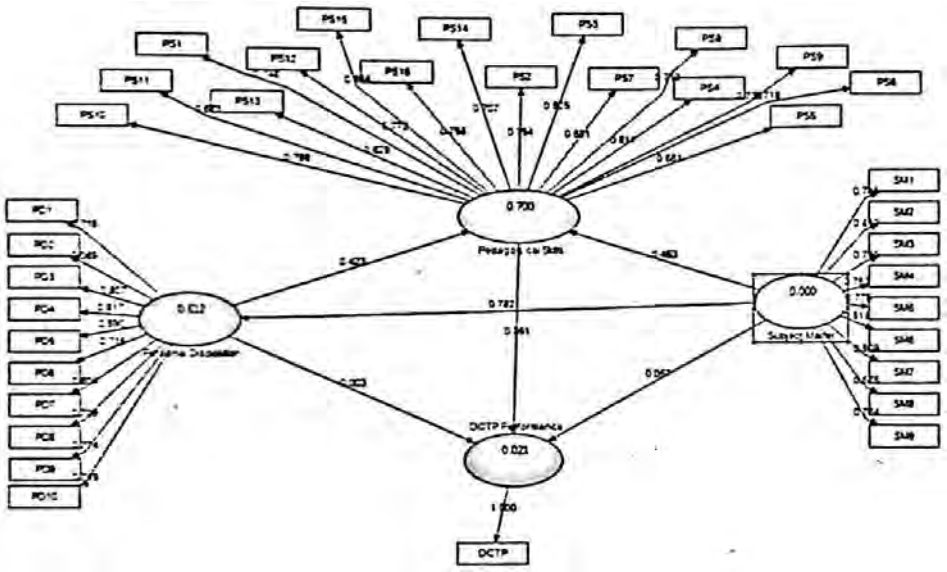
	OCTP Performance	Personal Disposition	Pedagogical Skills	Subject Matter
OCTP	**1**	0.1197	0.1392	0.1321
PD1	0.1668	**0.7185**	0.6145	0.6174
PD10	0.0239	**0.7186**	0.547	0.6165
PD2	0.0873	**0.0691**	0.0895	0.0156
PD3	0.0554	**0.8069**	0.7502	0.6656
PD4	0.1595	**0.8169**	0.7016	0.6435
PD5	0.0646	**0.6903**	0.5041	0.5202
PD6	0.1458	**0.7155**	0.4692	0.5644
PD7	0.1222	**0.8041**	0.5976	0.6134
PD8	0.1005	**0.7091**	0.4933	0.4597
PD9	-0.0488	**0.7738**	0.5574	0.5554
PS1	0.2032	0.5486	**0.7482**	0.5948
PS10	0.1067	0.6233	**0.7877**	0.6725
PS11	0.0309	0.4577	**0.6734**	0.5558
PS12	0.0677	0.5636	**0.7724**	0.5877
PS13	0.0611	0.7458	**0.8277**	0.708
PS14	0.098	0.494	**0.7072**	0.5499
PS15	0.1235	0.5583	**0.6565**	0.5212
PS16	0.086	0.5485	**0.7578**	0.5538
PS2	0.1975	0.5589	**0.794**	0.5786
PS3	0.1199	0.5619	**0.8254**	0.5922

PS4	0.0882	0.6854	**0.8108**	0.6832
PS5	0.1682	0.5951	**0.6806**	0.5317
PS6	0.0144	0.5474	**0.7176**	0.5985
PS7	0.1132	0.5882	**0.6808**	0.585
PS8	0.0851	0.6179	**0.7123**	0.5827
PS9	0.0959	0.5927	**0.7356**	0.5142
SM1	0.2023	0.5827	0.6037	**0.7446**
SM2	0.0979	0.6088	0.669	**0.8115**
SM3	0.0413	0.5796	0.6803	**0.7897**
SM4	0.082	0.5262	0.6761	**0.7617**
SM5	0.2172	0.5387	0.5223	**0.7764**
SM6	0.0721	0.6361	0.6894	**0.8178**
SM7	0.1409	0.7028	0.6292	**0.8085**
SM8	0.0261	0.6706	0.4885	**0.6752**
SM9	0.0452	0.5865	0.5359	**0.7635**

The results of the unidimentionality matrix indicate that all the items measure appropriately the constructs they are suppose to measure. This is because; each item recorded a loading of 60% or more.

Explanation of the Inner model

From the diagram, the target endogenous variable variance can be explained. The coefficient of determination, R^2, is 0.21 for the OCTP performance endogenous latent variable. This means that the three latent variables (Pedagogical Skills, Personal Disposition, and Subject Matter) slightly explain 21% of the variance in OCTP performance. Personal Disposition and Subject Matter together explain 70% of the variance of Pedagogical Skills whereas Subject Matter also explains 61.2% of the variance of Personal Disposition. Figure 2 shows the path for the model



It must be noted that the numbers in the circle show how much the variance of the latent variable is being explained by the other latent variables while numbers on the arrow are called the path coefficients. They explain how strong the effect of one variable is on another variable. The weight of different path coefficients enables us to rank their relative statistical importance.

Table 3: Convergent Validity and Reliability Measures

	AVE	Composite Reliability	R Square	Cronbachs Alpha	Communality	Redundancy
OCTP Performance	1	1	0.0206	1	1	0.0171
Pedagogical Skills	0.555	0.952	0.6997	0.946	0.555	0.2672
Personal Disposition	0.5093	0.9046	0.6123	0.8766	0.5093	0.3083
Subject Matter	0.5979	0.9303	0	0.9154	0.5979	0

From Table 3, it can be observed that the Average Varaince Extracted (AVE) all recorded values greater than 0.5 which means that the indicators of the

constructs share a high proportion of variance in common. According to Fornell & Larcker (1981), an AVE > 0.5 gives an indication of a good convergent validity. In terms of construct reliability, the values of the cronbachs alpha are all greater than 0.6 (Hair, et al, 2006). The impact of all the information in Table 3 is that the constructs are very strong to measure their effect on OCTP.

Table 4: Correlation Matrix

	OCTP Performance	Pedagogical Skills	Personal Disposition	Subject Matter
OCTP Performance	**1**			
Pedagogical Skills	0.1392	**0.7450**		
Personal Disposition	0.1197	0.7053	**0.7137**	
Subject Matter	0.1321	0.704	0.7025	**0.7732**

Table 4 shows Pearson correlation coefficients of the model variables for the total sample. Pedagogical skills, personal disposition and subject matter were moderately interrelated with OCTP performance while personal disposition and subject matter and pedagogical skills were all strongly interrelated. When we consider OCTP performance to be the dependent variable we may conclude from supplementary data that personal disposition, subject matter and pedagogical skills are variables which are positively related to OCTP performance. However, the indirect regressions as well as the regressions in the indirect paths contribute significantly, for personal disposition and subject matter when related to pedagogical skills.

Also, Sqrt (AVE) > correlations which means the model has passed the test of discriminant validity. Discriminant validity is the extent to which latent variable discriminates from other latent variables (Fornell & Larcker, 1981).

Table 5: Hypothesis Testing Results

Hypothesised Path	t statistics	P Value	DECISION
Pedagogical Skills -> OCTP Performance	0.5038	**0.3078**	reject null hypothesis
Personal Disposition -> OCTP Performance	0.0166	**0.4934**	reject null hypothesis
Personal Disposition -> Pedagogical Skills	3.7467	0.0001	Supported
Subject Matter -> OCTP Performance	0.2361	**0.4069**	reject null hypothesis
Subject Matter -> Pedagogical Skills	4.2049	0.0000	Supported
Subject Matter -> Personal Disposition	16.9973	0.0000	Supported

From Table 5, it can be observed that, the three indirect paths were not supported, thus, the hypotheses for these paths were rejected while the hypothesis for the direct paths were accepted.

Discussion

In the University of Cape Coast, students do one semester of on-campus teaching practice in their third year before they go out for their field experience, what have been termed as Off-Campus Teaching Practice (OCTP). During that period, student-teachers put into practice what they have leant in their teaching methodology class and also polish their personal disposition as teachers while at the same time building on their subject matter knowledge. Refusing to accept the H_0 that pedagogical skills acquired through micro teaching does not influence the performance of trainee economics teachers in off-campus teaching practice means that there is a relationship between these two variables. That relationship as depicted by the correlation is positive. This means that, for a teacher to perform well in OCTP, he/she should put into practice the pedagogical skills he/she has acquired during on-campus. Pedagogical skills can generally be divided into classroom management skills and content-related skills. Any good teacher knows that a class full of out-of-control students is unlikely to learn much. A teacher's first major task, then, is to learn to manage behaviour in his or her classroom. This set of pedagogical skills involves establishing clear rules and expectations, because students who do not know what is expected of

them are more likely to misbehave. Establishing expectations upfront keeps many problems from arising. When behavioural problems do arise in the classroom, however, a skilled teacher is able to handle them with a minimum amount of disruption to the learning environment. The other major area of pedagogical skills is that of teaching content effectively. These skills vary with the subject matter and level of instruction, as those skills needed to teach one group of students are significantly different from those needed to teach another group of students. Regardless of the content, however, a good teacher will present information in ways that actively engage the students in the material that they are learning. Good pedagogy involves not only imparting information, but also providing opportunities to apply that information. When a student teacher is able to do these during OCTP, supervisors will in no doubt score them high therefore making them perform well. This finding is supported by researchers such as Fernandez and Robinson (2007), Johnson (2006) and Mayhew (1982).

Again, personal disposition acquired during on-campus teaching practise also affects a student-teachers performance during OCTP. Personal disposition are often defined as the personal qualities or characteristics that are possessed by individuals, including attitudes, beliefs, interests, appreciations, values, and modes of adjustment. There is a significant body of research indicating that teachers' attitudes, values, and beliefs about students, about teaching, and about themselves, strongly influence the impact they will have on student learning and development (Collinson, et. al., 1999 and Combs, 1974). It is important for teacher educators to know and understand the dispositions of effective teachers, so as to design experiences that will help to develop these characteristics in students and to help students discover if they have the "dispositions to teach." This is because; a teacher with a good personal disposition creates the atmosphere conducive for effective teaching and learning. During instructional periods, student's views are tolerated and creativity and innovation are developed by the

students. Such student-teachers will definitely perform well during OCTP.

Finally, student-teachers subject matter knowledge in economics which is developed during on-campus impacts positively on their performance during their OCTP. A good teacher exhibits mastery of the subject matter. A good mastery of the subject matter increases the confidence level of the teacher during instructional delivery. During on-campus teaching practice, the student-teacher picks several economics topics from the Senior High School syllabus and teaches them to his/her peers in the presence of a supervisor. His/her peers and the supervisors subject the teaching into critical scrutiny. All this exercise is meant to make sure the student teacher has a firm grasp of his/her content area so as to perform well during OCTP (Chang, 1972).

Conclusion

Teaching as an art or science is like a machine; whatever is feed into it is what it produces. The systems theory of input-output model states that a set of objects or elements interacts to achieve a specific goal. Thus, the function of any system is to convert or process energy, information, or materials into a product or outcome for use within the system, or outside of the system (the environment) or both. This means that, for a student-teacher to perform well during OCTP, the student-teacher should have acquired the skills of pedagogy, improve his/her subject matter knowledge and develop a personal disposition suitable for the teaching profession. These elements are supposed to be improved or better still acquired during the on-campus (micro-teaching). The inputs of a good instructional delivery by a student-teacher are therefore his/her pedagogical skills, suitable personal disposition and a good grasp of the subject matter. The output or end product is a good performance exhibited by the student-teacher during OCTP and in their future teaching endeavours.

Policy Implications for Teacher Education

The implications of these findings for the teacher trainers and educators are as follows:

1. There should be specific focus on these three aspects of an effective teacher, improvement in pedagogical skills, acceptable personal disposition and adequate subject matter knowledge.
2. The preparation of the student-teacher should be centred more on micro-teaching (on-campus). This is because; at that stage the student-teacher has the opportunity to get constructive feedback from the colleagues and the supervisors and is able to improve upon his/her teaching skills and develop more appropriate pedagogical skills. The focus is not on the marks or the grades as compared to the OCTP.
3. The course on methodology should be revised to incorporate all the three inputs identified in our model; Subject Matter Knowledge, Pedagogical Skills and Personal Disposition instead of the over concentration on pedagogy. For example, there can be a course on Effective Teacher Disposition for education students just as they are taken through Methods of teaching.
4. The period for on-campus (micro-teaching) should be extended to cover two semesters to enable student-teachers master in these critical areas and also supervisors should be well equipped to provide constructive feedback to student-teachers and shape them not only for the OCTP but also the teaching profession as a whole.

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