

Examining the relationship between pre-service teachers' entry characteristics and their academic achievement

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Abstract

There is enthralling evidence from basic and secondary education that students' entry characteristics influence academic achievement. There is also evidence, albeit limited, that pre-service teachers' beliefs and values influence their academic performance. However, researchers have not been able to do much in terms of understanding the complex relationship between pre-service teachers' entry characteristics and their achievement. This cross-sectional study, therefore, explores the relationship between pre-service teachers' entry characteristics and their academic achievement in Colleges of Education. The extant data of 500 pre-service teachers, including their background characteristics such as entry aggregates, sex, and programme specialty were examined. The CGPA of four semesters work was used as a proxy for academic achievement of students. The results suggest that there was congruence between entry grades and academic achievement. Entry grades explained about 21.3% of the variation in pre-service teachers' academic achievements in college. The study concludes with a request to teacher education colleges to have a critical look at the background characteristics of those they admit to be trained as future teachers. This will help the system guide pre-service teachers to connect new knowledge to earlier learning.

Keywords: pre-service teachers; entry grades; academic achievement; cross-sectional study

1. Introduction

The last twenty years of Ghana's higher education system has seen a shift from élite to mass education. This is as results of the increasing number of people who are due to attend school, and schools being built around the country. This requires that we train more teachers to make up for the shortfalls in teacher-pupils ratio, especially, in the basic education system. Still, there is a growing concern about the skills and competencies of teachers the nation is producing. These apprehensions are often characterized by serious public debate on issues of education such as improving the quality of teaching and learning in schools and students' performances and teacher training (i.e., enhancing the effectiveness of teachers and modifying teacher training curricula). These issues are often accompanied by suggestions for the need to rethink education (Yogev & Michaeli, 2011; Cochran-Smith & Fries, 2005; Darling-Hammond & Bransford, 2005; Shulman & Shulman, 2004); to reflect ways of helping children acquire the vital competencies (i.e., the mixture of knowledge, skills and attitudes suitable for a specific context) needed to progress in today's societies and labour markets (World Bank, 2013; European Commission, 2012; Musset, 2010; Day, 2004).

For example, the European Union in 2006 adopted a European Reference Framework of Key Competencies for Lifelong Learning to identify the key competencies necessary for personal fulfilment, active citizenship, social cohesion and employability in a knowledge society (Anane, 2014). Its major innovation is to

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move from a static conception of curricular content to a dynamic combination of knowledge, skills and attitudes appropriate to the many and varied real-life contexts on which people need to use them (European Commission, 2012; UNESCO, 2012; Zimmerman & Schunk, 2009). In fact, pre-service teachers are expected to develop both content and pedagogic knowledge to be able to help students that would be entrusted in their care to also develop the necessary competencies and skill for 21st century living skills.

Lewin and Stuart (2003) believe that any effective system of teacher education thrives on the recognition and building on the characteristics and motivation that pre-service teachers bring to the initial training programme. They assert that drawing on trainee's entry behaviour is necessary, because, these entry behaviours can serve as the starting points in drawing up curricula that address trainees' needs and competencies. In the same vein, Duckworth, Akerman, MacGregor, Salter and Vorhaus (2009) assert that learners draw on previous experience to build a repertoire of beliefs and strategies that enhance learning. However, available research conducted in Ghana by Lewin and Stuart (2003, p. 45) also revealed that most pre-service teachers achieved relatively low results at the end of their senior high school programmes, leaving them underqualified for higher education. Colleges of Education, it seems, take the next portion down from the Universities. This situation is still pervasive as has been illustrated in the ensuing paragraphs that Ghana Education Service ([GES], 2008), National Council for Tertiary Education ([NCTE], 2015) and National Conference of Principals of Colleges of Education ([PRINCOF], 2013) keep wavering on the standard or entry requirements needed for admission into Colleges of Education in Ghana.

The Ministry of Education (MoE) is responsible for the formulation of policies, as well as monitoring and evaluation, while policy implementation is the responsibility of NCTE, GES and the Colleges of Education (CoE). At the core of teacher education policy in Ghana is to produce effective and competent teachers through the recruitment and training of good candidates with good academic background as well as positive attitudes and dispositions in colleges of education. Even though candidates are selected with the demand-driven conception – that is producing teachers based on the needs of basic schools, it is believed that if candidates are selected based on good previous academic performance, they would benefit from various training programmes, and would be able to do worthily when posted to teach in basic schools after training (MoE, 2011). As their mission, the colleges of education are to train competent and effective school teachers who possess: a clear sense of responsibility for ensuring that learning takes place, and in this regard, the need to train an empathetic, enthusiastic, self-confident and self-motivated teacher; broad education background that will enable them function purposefully and efficiently as citizens; essential professional skills and techniques relevant in teaching to safeguard effective interaction with pupils in instruction and moral soundness and capability to serve as role models and capabilities to use the contents of the curriculum to develop desirable personal qualities in children.

Available evidence, however, indicate that decisions on the entry requirements into teacher training institutions in Ghana is in a flux, as requirements keep changing, and kept at the whims of political expediency. For example, in 2013, the entry requirement was changed from six credit passes to five comprising English language, core mathematics, integrated science or social studies and two elective subjects (National Conference of Principals of Colleges of Education [PRINCOF], 2013). For three years running, the minimum entry requirement for core subjects such as mathematics has been kept at D7 (National Council for Tertiary Education [NCTE], 2015), which hitherto was not acceptable for admission into colleges of education. This clearly suggests that quality is being compromised for quantity as these cut off points are established not based on any scientific process or evidence, but by political expediency.

Yet, quality teacher education (i.e. a good mix of content knowledge and professional skills) is very crucial to the development of the teaching profession. The need to train competent and reflective teachers capable of functioning as high quality

practitioners in our school system is indispensable, the necessity becoming more obvious with the increasing levels in students' failure in both international and domestic examinations.

In terms of Teacher education programmes, Ghana has long used a tailored set of curriculum-embedded-assessments to support teacher candidate learning and certification. The assessments which are often conducted by state institutions such as the Institute of Education, University of Cape Coast and other universities of education are mostly high-stakes in nature due to the critical decisions that emanate from these assessments. When students are admitted to colleges of education in Ghana for their initial training, they would have to pass all their first-year examinations (two-semester work) or else, a fail in even one paper leads to withdrawals from college. If a pre-service teacher is able to go through and crosses this 'rubicon' in the first year, one would have to pass all papers in the third year before the candidate is given posting to a school, and a teachers' number; a proxy for teachers' license as at now.

Examinations in colleges of education have usually tested basic skills, content knowledge, and, increasingly, pedagogical knowledge. Nevertheless, current changes in national accreditation processes (i.e., the introduction of teacher licenses) and the move to segregate the training of basic school teachers into three main categories, namely; early childhood (which is made up of kindergarten to primary three), upper primary and junior high school have put programme outcomes under scrutiny. The policy environment increasingly stresses that teacher education programmes, especially at the basic level provide proof that colleges of education graduates have learned to teach and possess the requisite competencies to operate at their various designations of professional practice.

In fact, there is a budding level of policy interest in pre-service teachers' background characteristics (e.g., entry grades) and its impact on learning and attainment in colleges of education. This probably stems from the notion that the demands on the teacher require that he or she has a strong prior knowledge in the subject to be taught to be able to build upon in college. Retention of pre-service teachers and their successful completion of professional and academic programmes are a complex issue that may involve a multiplicity of academic and non-academic determinants, especially, where colleges of education recruit from a diverse group of population which varies in age, prior learning abilities, interest and academic abilities (Mckenzie, 2008; Mckenzie, Schweitzer & Robert, 2001).

Prior achievement is an important factor in students' learning process and future academic performances. There is a wealth of empirical evidence which shows that students' entry behaviour such as parents' socio-economic status, and resources available to the student have significant effects on their academic performance in college (Jeynes, 2002; Considine & Zappala, 2002). As indicated by Thompson and Zamboanga (2004), prior knowledge can obstruct or support students' new learning. One explanation usually adduced by theorist and researchers is that individuals with greater antecedent knowledge of a course material, recall and understand more than those with limited prior knowledge. However, empirical evidence on the relationship between academic performance and sex is mixed. Some studies (see Weis, Heikamp & Trommsdorff, 2013; Wach, Spengler, Gottschling, & Spinath, 2015; Williams, White & MacDonald, 2016; Duckworth & Seligman, 2006) have found significant differences in the performance of boys and girls in secondary schools whilst others (see Sarouphim & Chartouny, 2017; Sue & Abe, 1995) found no statistically significant differences between boys' and girls' academic performances.

Additionally, prior knowledge within specific domains benefit students' learning and achievement. For example, in the teacher training context, it is believed that trainees actively construct or build new ideas or concepts from their current and past experiences (Avalos, 2011; Schunk, 2008; Roberts, 2006); connect new knowledge to prior knowledge and incorporate the new experiences into an already existing framework with alterations in the existing structures (Schunk, 2008). This assumption has been supported in part by a number of studies of academic content domains, including psychology – information processing (Winne, 2009) and teacher

professional development. Hattie (2003) found in a study that past learning is often perceived to be the best predictor of future learning.

Winne (2009) posits that of all the resources (i.e., both cognitive and contextual), prior knowledge (which includes values, beliefs, dispositions, and styles; motivation; field knowledge; knowledge of the current task; and knowledge of study tactics and strategies) is the most significant in information processing during task performance. He further asserts that the courses of action that are involved in students' information processing during learning are believed to include searching, monitoring, assembling, rehearsing, and translating ([SMART] or operations), which aids in the creation of a new information called product (Winne, 2009; p. 163).

In the same vein, Hattie (2003) asserts that professionals do differ in how they organize and use [this] content knowledge. Professionals have knowledge that is more integrated, in that they combine new subject matter content knowledge with prior knowledge. Teachers can relate current lesson content to other subjects in the curriculum, and make lessons uniquely their own by changing, combining, and adding to them according to their students' needs and their own goals (p. 5).

The possible impact of prior knowledge is particularly essential when students enrol in courses such as education studies, English language, mathematics and science for the reason that there is a wide-spread concern in these subjects and their implications for teacher professional practice. Pre-service teachers are thus likely to start these courses with significant previous knowledge resulting from varied sources, including earlier studies in secondary school, information from the media, folk theories (Thompson & Zamboanga, 2004), and information from every day and vicarious experiences (Schunk, 2009).

Nevertheless, educational production functions with input variables such as class size, teacher experience, and teacher education is often considered, and these become the most commonly purchased inputs to schools, notwithstanding the fact that they have pint-sized logical association to student outcomes, suggesting that orthodox input policies are not likely to improve achievement (Hanushek & Wößmann, 2007; Huws, Reddy, & Talcott, 2006). As John Hattie once articulated: "...my pursuit is motivated by the goal of determining the qualities of excellence – because if we can discover what truly works in the training of our teachers, we then have the basis for developing appropriate professional development, the basis for teacher education programmes to illuminate that which truly makes the difference, the basis for commending that our profession truly does have recognisable excellence which can be identified in defensible ways, and the basis for a renewed focus on the success of our teachers to make the difference" (2003, p. 5).

Taken together, a review of literature suggests that students' learning function under the supposition that the growth and development trajectories are linear. To this end, it is believed that students who enter colleges with high grades are likely to achieve high at the end of their training period, and students who enter with low grades would end up having low performance at the end of the training session (The Matthew Effect) (Tol, 2009; Cromley & Azevedo, 2007) in both academic and practice performances (Avalos, 2011; Darling-Hammond, 2010; Bembenuddy, 2007; Randi, 2004; Dembo, 2001; Lewin & Stuart, 2003).

In the educational context, the Matthew effect signifies that students with comparatively high academic ability at a certain time point of interest continue to increase academically faster than less able students. In this way, differences in achievement that already exist among students when they enter a school become increasingly greater as they progress through school. Studies (see He & Tymms, 2014; Ghazvini & Khajepour, 2011; Zwick & Sklar, 2005; DeBerard, Spielmans, & Julka, 2004) that frequently assess students' gain in learning in relation to prior attainment have clearly shown this. Over the years, literature has it that achievement scores are deemed only to mirror the current attainment of a student in relation to the time of testing and do not give a complete depiction of the influence of other factors on the learning continuum such as the school, teachers and resources on the student's performance throughout the study period in the school (see, He & Tymms, 2014; Crane, 2002).

In view of this, “value-added measures which involve the comparison of students’ present or outcome achievement with their prior achievement to assess the effect of schooling for the specified period of study in the school” (He & Tymms, 2014, p. 26) are often presumed to be a good predictor of future performance (Moos & Ringdal, 2012). However, as suggested by some researchers, even though students’ academic achievement in college requires some previous competencies, and even when these are clearly in evidence, these abilities alone do not often distinguish high-performing students from low-performing students (Kitsantas, Winsler, & Huie, 2008). As asserted by He and Tymms (2014), students’ assessment scores are a reflection of the “combined influences of a number of factors such as the learning environment in the school, the socioeconomic background of the students, the student’s attitudes towards study, the academic achievement attained before entering the school, and many others” (p. 26). Again, students’ achievements in colleges are sometimes influenced by other cognitive and motivational variables and the learning context through their active and constructive engagement in learning (Pintrich, 2004).

Typically, it is problematic to offer a precise estimation of the impact of a student’s prior achievement on his/her current academic performance - that has led to many different conceptual and theoretical models being formulated in understanding the impact of school, teachers, and students’ learning on their performance (He & Tymms, 2014; Zimmerman & Schunk, 2008; Boekaerts & Corno, 2005; Pintrich, 2004). The lack of clarity in the estimation of students’ academic performance has led to various propositions on the predictive value of students’ prior attainment of their current performance. For example, existing literature suggests that students who enter colleges with high entry aggregates could still perform poorly and those with low entry grades could also perform better at the end of the study period. This means that the high-high and low-low performances by high achievers and low achievers respectively could be due to the use of the conventional regression methods - making effect detection in such studies an artefact (He & Tymms, 2014; Preacher & Kelly, 2011; MacKinnon & Fairchild, 2009; MacKinnon, 2008; Preacher & Hayes, 2008).

These notwithstanding, researchers have not done much in terms of research to model the effect of prior attainment on the academic achievement of students in initial teacher education setting. Yet, teacher educators believe that trainees actively construct or build new ideas or concepts from their current and past experiences (Avalos, 2011; Schunk, 2008; Roberts, 2006); connect new knowledge to prior knowledge and incorporate the new experiences into an already existing framework with alterations in the existing structures (Schunk, 2008). Or pre-service teachers’ preconceptions developed in their “apprenticeship of observation” (see Hammerness et al., 2005, p. 367) are not being shaped, but rather reinforced.

That means it is possible for pre-service teachers’ motivation and self-regulation of learning to partially or completely (Preacher & Kelly, 2011; Preacher & Hayes, 2008) mediate how prior attainment influences final college achievement or there could be no significant effect at all. Even so, not much empirical studies have been conducted to establish how entry grades and other background characteristics affect pre-service teachers’ academic performance. The concept of prior learning in teacher education is applicable to two widely recognised forms: prior experiential (or informal) learning and prior certificated learning or academic achievement. There is empirical evidence in support of the focus on pre-service teachers’ entry aggregates as a point of reflection on academic success in college (Lizzio & Wilson 2013). However, there seem to be limited studies on the influence of previous academic performance on pre-service teachers’ achievement in college from developing countries. This study, therefore, sought to examine the relationship between pre-service teachers’ entry characteristics and their academic achievement in college to be able to fashion out learning settings potentiating enough to maximize their dispositions, potentials, abilities and achievements.

In order to find out the association between pre-service teachers’ entry characteristics and their academic achievement, I focused in this study on three research questions:

1. What relationship exists between sex and entry aggregates of pre-service teachers?
2. What is the relationship between pre-service teachers' programme of specialization and entry aggregates?
3. What entry characteristics are related to pre-service teachers' academic achievement?

2. Methodology

2.1. Sample

Multistage sampling technique was used in selecting 500 participants for this study. The prospective contributors in this study comprised all the 22800 students from two year groups (2016 and 2017 year groups) in 38 public funded colleges of education in Ghana. The sample frame was made up of 6542 students from the ten selected colleges of education (i.e., two each from the five PRINCOF zones).

2.2. Context

Entrance to post-secondary teacher training institutions in Ghana is mainly based on stated minimum requirements by the Ministry of Education. As an entry requirement, candidates for colleges of education need aggregate 36 or better (based on the standard nine scales, A1 = 1 to F9 = 9) in six subjects at the West African School Certificate Examinations (WASSCE) or the Senior Secondary School Certificate Examinations (SSSCE). The six subjects should include credit passes in three compulsory subjects (i.e., Mathematics, English Language and Integrated Science or Social Studies) and any other three subjects which are related to the student's area of specialization, usually referred to as electives. As a cross-sectional study, samples were selected from 2013 and 2014 cohorts of pre-service teachers.

2.3. Measures

Entry aggregates: The requirements for entry into colleges are based on an aggregate of 36 or less, including at least credits in core science, core mathematics, and English language. The minimum qualifying aggregate grade of '36' is derived from three core subjects (English, mathematics and science) and three elective subjects (either science or general arts programme). Grade designations for WASCE are as follows: A1, B2, B3, C4, C5, C6, D7, E8 and F9. For entry into colleges, a minimum grade of C6, which is a credit, is required. This means that the six subjects considered for entry yielded a minimum of 36 and a maximum of 6 – thus, the higher the aggregate score, the lower the performance and the lower the aggregate score, the higher the performance

Academic achievement: This was measured by using two semesters work of students and the cumulative grade point averages (CGPAs) computed using the Students' Online Information Systems (SOIS) software used by the awarding institution. This extant data was retrieved using their background information such as Students' registered numbers. Students' achievements were measured on a six-point scale and interpreted as:

1. < 1 is fail or unsatisfactory
2. 1.0 – 1.9 is pass or fair
3. 2.0 – 2.4 is third class or satisfactory
4. 2.5 – 2.9 is second class lower or good
5. 3.0 – 3.5 is second class upper or very good
6. 3.6 – 4.0 is first class or excellent.

3. Results

Relationship between sex and entry aggregates of pre-service teachers?

Results in Table 1 show the distribution of aggregate score range from six subjects as indicated by the admission criteria from the National Council for Tertiary Education (NCTE) for the admission of pre-service teachers into Colleges of Education in Ghana. For entry into colleges, a minimum grade of C6 (depending on the year of entry into college), which is a credit, is required. This means that the six subjects considered for entry yielded a minimum of 36 and a maximum of 6 – thus, the higher the aggregate score, the lower the performance and the lower the aggregate score, the higher the performance.

Table 1. Descriptive statistics of sex and entry aggregates of respondents

Aggregate Score Range	Sex of Respondents					
	Male		Female		Total	
	F	%	F	%	F	%
6-11	5	1.0	-	-	5	1.0
12-17	11	2.2	5	1.0	16	3.2
18-23	46	9.2	27	5.4	73	14.6
24-29	92	18.4	72	14.4	164	32.8
30-36	116	23.2	126	25.2	242	48.4
Total	270	54.0	230	46.0	500	100.0

The results indicated that, of the 500 students in the study, only 5, representing 1% had at most a grade of B2 in the six subjects used as prerequisite for entry into colleges of education. With this number, none was a female. Less than 20% of the students obtained aggregates lower than 24 and a majority, 242 representing 48% entered colleges with aggregate 30 or higher. This suggests that students in colleges of education had weaker grades and were mainly people who could not have entered the main stream universities.

Concerning sex distribution, 54% of the respondents were males and 46% were females. This represented a fair distribution in terms of sex representation for the study considering the total population and the proportions of males and females in the various colleges of education. However, with contingency coefficient (T) value of .153, $\chi^2 = 11.92$, $p = .02$, $\alpha = .05$, it means that male ($M = 27.46$, $SD = 6.03$) pre-service teachers gained admission into colleges with better grades than their female ($M = 29.11$, $SD = 4.91$) counterparts.

Relationship between pre-service teachers' programme of specialization and entry aggregates

Students' background characteristics in terms of programmes of specialisms in relation to their sex and entry aggregates were examined and the results are as shown in Table 2.

Table 2. Summary statistics of aggregate score range by programme of specialization and sex

Aggregate Score Range	Programme of specialization				Total
	General		science		
	M	F	M	F	
6-11	3(0.6%)	-	2(0.4%)	-	5(1.0%)
12-17	2(0.4%)	3(.6%)	9(1.8%)	2(0.4%)	16(3.2%)
18-23	22(4.4%)	15(3%)	24(4.8%)	12(2.4)	73(14.6%)
24-29	55(11%)	51(10.2%)	37(7.4)	21(4.2)	164(32.8%)
30-36	70(15.4%)	93(18.6%)	46(9.2%)	33(6.6%)	242(48.4%)
Total	152(30.4%)	162(32.4%)	118(23.6%)	68(13.6%)	500(100.0%)

Of the 500 respondents who took part in the study, the majority of 62.8% read general related courses – that is, one of the two programmes offered by Colleges of Education which seeks to train teachers to teach all subjects at the basic school level. The results showed that there were more females, about 52% of the 314 respondents who read general programmes than their male counterparts. On the other hand, there were more males, 63.4% of the 186 students who read science related programmes than their female counterparts. Of those who had aggregate scores from 6-11, 3 read general programmes, whilst 2 read science programmes.

For those who entered the college with aggregates 12 to 17, 11 read science and only 5 read general programmes. For aggregate score range of 30 to 36, the results indicated that they were mostly represented by students who read general related programmes. They represented 34% of the total of 48.4%. In all, a contingency coefficient (T) value of .164, $\chi^2 = 13.81$, $p < .05$, suggested that pre-service teachers who read science related courses ($M = 27.15$, $SD = 6.11$) entered colleges with better entry grades than their counterparts who read general ($M = 28.86$, $SD = 5.18$) programmes. However, only 9.8% of those who read science related courses and about the same percentage, 9% in general related courses had aggregate 23 or better. In fact, none of the females among the study group had an aggregate less than 12, and only 1% of the males had aggregates 6 to 11.

Entry characteristics and pre-service teachers' academic achievement?

Differences in academic achievement associated with sex, programme of specialization and entry aggregates were examined. Results as indicated in Table 3 show that there is a very weak and non-significant relationship between sex and academic achievement ($r = -.055$, $p > .01$).

Table 3. Relations between pre-service teachers' programmes of specialization, sex, entry aggregates and academic achievement (CGPA)

Variables	Sex of Respondents	Programme of specialisation	Entry Aggregate
	Correlations (r_{pb})	Correlations (r_{pb})	Correlation (r)
Academic Achievement	-.055	.095*	-.462**

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed)

N = 500

Differences in academic achievement associated with sex, programme of specialization and entry aggregates were examined. Results as indicated in Table 3 show that there is a very weak and non-significant relationship between sex and academic achievement ($r = -.055$, $p > .01$). The results revealed a weak positive relationship between students' academic achievement and their programme of specialism, even though not at the 0.01 significant level. This means that students who read science related programmes had a slightly better performance ($M = 2.477$, $SD = .496$) compared to their counterparts in general related programmes ($M = 2.371$, $SD = .568$). However, the results indicated a negative relationship between pre-service teachers' entry aggregates and their academic achievement ($r = -.462$, $p < 0.01$). This means that pre-service teachers' previous academic achievement from senior secondary school explains about 21.3% of the variation in their academic performance in college of education.

4. Discussions

The results of this study revealed essential facts on pre-service teacher training. The analysis of data shows that pre-service teachers' sex correlates with their entry aggregates. Male students had better entry grades than their female counterparts. This is in line with some findings from other studies such as Ghazvini and Khajehpour (2011) who found that gender differences existed in the academic performance of boys and girls in senior high schools in Tehran. In fact, the difference between males

and females in terms of their entry grades is unsurprising because analyses of trends in candidates' performance in WAEC examinations over decades show consistently high performance of males over females.

Students' background characteristics in terms of their programmes of specialisms in relation to their sex and entry aggregates were examined and the results indicated that there was statistically significant relationship between sex and programme specialisations. It was surprising that a weak and non-significant relationship between sex and academic achievement was revealed by the current study, notwithstanding the fact that male students entered college with better entry grades. The data revealed that more females specialised in general programmes than their male counterparts. On the other hand, male pre-service teachers specialised in science programmes than their female counterparts. This finding is not surprising as most males are found to study science related subjects than females in senior high schools in Ghana.

Literature has it that value-added measures involve the comparison of students' present or outcome achievement with their prior achievement to assess the effect of schooling for the specified period of study in the school (He & Tymms, 2014, p. 26). Entry aggregates which are often used as prior performance are presumed to be good predictors of future academic performances (Moos & Ringdal, 2012). This is exactly the case in this study. Entry aggregates are good predictors of pre-service teachers' academic performance in colleges of education. Findings on the third research question indicated that the grades students obtained during their secondary school have direct influence on their performance while in training to become teachers. Pre-service teachers who entered college with good entry grades also had good overall grade point averages. This agrees with the findings of previous studies. Research findings (e.g., Sitzmann & Ely, 2012; DeBerard, et al., 2004; Thompson & Zamboanga, 2004; Hattie, 2003; Pintrich & De Groot, 1990) suggest that students' prior abilities are among the highest predictors of school achievements. In this study, entry aggregates (prior academic performance) accounted for approximately 21% of the variation in pre-service teachers' academic achievement in colleges of education.

5. Conclusions and Suggestions

The evidence produced by this study suggests that the NCTE and the teacher education institutions have to have a serious rethink about the admission requirements, if Ghana is to produce competent teachers for improved teaching and learning in basic schools. The results indicate that students generally entered college with weak grades. Very few were admitted with grades higher than D7 in the prerequisite subjects. Also, pre-service teachers' sex has no relationship with their academic achievement. This is probably due to the fact that they (both male and female students) experienced teaching equally, notwithstanding the fact they entered college with different prior academic performance. The results revealed that pre-service teachers' entry aggregates correlated negatively with their academic performance in college. This suggests that students who entered College with good entry grades (or low entry aggregates) achieved higher cumulative grade point averages than those who entered college with poor entry grades (or high entry aggregates). The finding in this present study makes clearer as to which entry characteristics and how much of pre-service teachers' prior performance contribute to college achievement. Is the search over? The researcher believes further studies are needed in the area of exploring other factors that may mediate individually or jointly on the relationship between teacher trainees' achievement and their prior academic achievement.

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