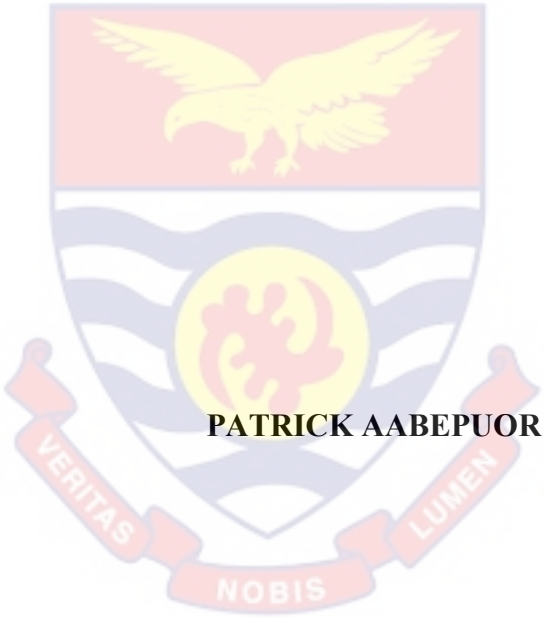
UNIVERSITY OF CAPE COAST

ACADEMIC MOTIVATION, SELF-REGULATED LEARNING, AND ACADEMIC ENGAGEMENT OF STUDENTS IN COLLEGES OF EDUCATION IN THE UPPER WEST REGION



PATRICK AABEPUOR

2024

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ACADEMIC MOTIVATION, SELF-REGULATED LEARNING, AND ACADEMIC ENGAGEMENT OF STUDENTS IN COLLEGES OF EDUCATION IN THE UPPER WEST REGION

BY

PATRICK AABEPUOR

Thesis submitted to the Department of Education and Psychology of the Faculty of Educational Foundations, College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy degree in Educational Psychology

MARCH 2024

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature……Date……

Name……

Supervisor's Declaration

I hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Supervisor's Signature……. Date……

Name……

ABSTRACT

Being academically motivated is crucial for students in any academic field. It enables them to use self-regulated learning methods and actively participate in their studies, thus increasing their chances of academic success. The research thus explored the academic motivation, self-regulated learning, and academic engagement among students attending Colleges of Education in the Upper West Region. Employing the positivist paradigm and the quantitative approach, the study utilised a correlational research design. The multi-stage sampling method was adopted to sample 274 students from 951 in their second year in Colleges of Education. Data was collected using the adapted version of established scales: the College Edition of the Academic Motivation Scale (AMS) developed by Vallerand (1992), the Taiwanese Short Self-Regulation Questionnaire (TSSRQ) validated by Chen and Len (2018), and the University Student Engagement Inventory (USEI) validated by Assuncao et al. (2020). The data was analysed using Pearson r, multiple linear regression and independent sample t-test. The study's findings indicated that academic motivation and academic engagement were significantly related. However, there was no significant relationship found between self-regulated learning and academic motivation or academic engagement. It was also revealed that programme of study did not significantly predict academic motivation, self-regulated learning, and academic engagement. The study recommended that Principals and tutors within Colleges of Education in the Upper West Region should aim at creating a conducive learning environment and employ effective instructional approaches that enhance the cultivation of academic motivation, self-regulated learning, and academic engagement for students.

KEYWORDS

Academic motivation

Self-regulated learning (SRL)

Academic engagement

Programme of study

Sex (Gender)

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God bless you all.

DEDICATION

To my mother, my wife and children

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CHAPTER ONE

INTRODUCTION

Academic progress and fulfilment of students are largely dependent on a complex interaction of factors in a constantly evolving landscape of higher education. Academic motivation, self-regulated learning, and academic engagement are important elements that influence students' educational journeys. The effects of the elements can be felt if Colleges of Education pay attention to these elements when carrying out their mandate of shaping the minds and preparing prospective teachers for the role of training the next generation. Understanding College of Education students' academic motivation, self-regulated learning, and degree of academic engagement is critical not only for their academic success but also has implications for the quality of education future learners will receive.

Background to the Study

Academic engagement is a relevant psychological construct that is crucial in education. It contributes to the long-term learning of students. Engaged learners are able to endure with difficult materials and put their knowledge to use in other situations (Schlechty, 2011). Student engagement is a sign of student success (Kuh, 2001, 2003; Pascarella & Terenzini, 2005) and skills development essential for life. Academic engagement is determined by assessing students' involvement and active participation in educational endeavours, including in-class and out-of-class school events (Alrashidi, Phan, & Ngu, 2016; Hart, Steward, & Jimerson, 2011). The effectiveness of students' learning experience is significantly impacted by the time and effort they dedicate to their studies and other educational pursuits (Alexander &

Murphy, 1998). Students who are engaged, display a sense of vitality and a strong attachment to their academic pursuits and exhibit strong involvement in their educational journey (Schaufeli, Martinez, Marques-Pinto, Salanova, & Bakker, 2002). This heightened engagement, as evidenced by research (Bresó, Schaufeli, & Salanova, 2011; Casuso-Holgado et al., 2013; Gasiewski, Eagan, Garcia, Hurtado, & Chang, 2012; Oriol-Granado, Mendoza-Lira, Covarrubias, Apablaza, & Molina-López, 2017; Pike, Smart, & Ethington, 2012), translates into satisfactory performance and attainment in higher education.

Relevant literature suggests that attainment of academic success may be attributed to elevated levels of student engagement (An, 2015; Gonzalez, Talavera-Velasco, & Gutierrez, 2020). Carini, Kuh and Klein (2006) have highlighted that levels of academic engagement strongly predict student learning and personal development. Their continuous engagement in learning predicts learning achievement across all educational levels (Fredricks, Blumenfeld, & Paris, 2004).

One of the tools that students can utilise to gain an engaged state is academic motivation (Kanellopuolou & Giannakuolopuolos, 2020). Motivation is a precondition for achieving engagement (Martin, Ginns, & Papworth, 2017). A learner who is actively engaged is inherently motivated, opting to pursue studies for various reasons and objectives, such as acquiring new knowledge, finding enjoyment in specific activities, or mastering a new skill. Academic motivation is at the core of academic engagement. It represents the expression of academic motivation through active involvement in learning tasks, shaped by students' perceptions of the extent to which these activities fulfil their psychological needs (Sünbül, Kesici, & Bozgeyikli,

2003). Irvin, Meece, Byun, Farmer, and Hutchins (2007), opine that the two constructs; thus, academic motivation and academic engagement, are related and relevant for enhancing the improved achievement of students, progression in life, and academic accomplishments. Academic motivation in the view of Hulleman, Barron, Kosovich and Lazowski (2016), refers to the desire or willingness students have and invest in their academics and experiences in school. Researchers have reported that students who have motivation for their academics, tend to value their learning and school, they prefer learning and enjoying activities associated with learning (Eccles & Wigfield, 2002; Larsen & Puck, 2020; Zimmerman, 2000, 2008). Similarly, Martin (2013) posits that students with high motivation levels find pleasure in classroom environments, that motivates them to partake actively in various phases of the learning process. Elevated motivation has the potential to improve student's learning experiences, influencing their interest, task selection, efforts to tackle challenging assignments, and perseverance (Zimmerman, 2012). Academic motivation is crucial in predicting students' academic accomplishments, their ability to adhere to learning objectives (Utvaer & Haugan, 2016) in addition to the application of self-regulated learning (SRL) techniques (Zimmerman & Schunk, 2012). According to Fredricks et al. (2004), SRL is important and influential in student academic engagement. Active employment of self-regulation techniques is emphasized as a crucial component of students demonstrating engagement in school. SRL strategies reflect increased academic engagement (Wolters & Taylor, 2012) and the ability to direct one's learning encounters (Boekaerts, Pintrich, & Zeidner, 2000; Schunk & Zimmerman, 1998). Individuals, adept at self-regulation possess the ability to

govern their behaviours effectively, restrain impulsivity, adapt to changes, and manage emotional reactions. Self-regulation is an essential aspect of an individual's cognitive ability promoting learning and achievement. Çetin (2015) indicates that SRL involves the transformation of one's intelligence into academic skills, directing and guiding the learning process independently. Individuals who engage in SRL are perceived as dedicated participants who effectively guide their own learning experiences through various methods. These methods include organizing and rehearsing information for learning, monitoring their cognitive processes, asking for assistance when needed, and maintaining positive motivation regarding the abilities and the value of learning (Boekaerts et al., 2000; Panadero, 2017; Schunk et al., 1998;)

Several studies espoused that academic motivation and SRL are significantly related (Mahmoodi, Kalantarib & Ghaslanic, 2014; Pintrich, 2010; Schraw, Creppen, & Hartley, 2006; Schunk & Ertmer, 2010; Zimmerman, 2010; Zimmerman & Schunk, 2004). Furthermore, academic motivation is identified as a predictor of SRL (Schunk, 2008). Schunk (2005) mentions that the control of motivational and regulatory processes leads to beneficial conditioned outcomes on performance in academics.

A reciprocal correlation and influence exist among academic motivation, SRL, and academic engagement. For instance, Reeve and Lee (2014) reported that academic motivation and student engagement are intertwined, with shifts in engagement resulting in alterations in motivation. Also, the act of self-regulation of an individual increases their motivation (Schmeichel, Harmon-Jones, & Harmon-Jones, 2010), which increases the likelihood of a person engaging in self-regulation (Vohs, Baumeister, &

Schmeichel, 2012). Similarly, LeMay (2017) reported a significantly positive association between engagement and SRL. Thus, Self-regulation is the driving force that transforms motivation into engagement. A model proposed by Kormos and Csizer (2014) suggested that motivational elements, including the reason for learning, directing effort toward a goal, and individual beliefs, are crucial in facilitating SRL. The employment of SRL enhances students' academic motivation and engagement in their studies which influence their learning and achievement. According to Price and Tovar (2014), it is commonly found in research that engagement consistently predicts retention and graduation rates. These constructs, namely academic motivation, SRL, and academic engagement, are relevant for students to succeed academically.

Considering the relevance of the above-mentioned constructs, it would be beneficial for students to possess them to increase their chances of succeeding in their fields of study. Despite this expectation, students exhibit academic motivation, SRL, and academic engagement at different levels including gender (sex)and programme of study.

A study by Dramanu and Mohammad (2017) on the academic motivation and performance of Ghana's junior high school students, discovered differences in academic motivation between female and male students. Appiah-Kubi, Amponsah, Nti-Adarkwah and Collins (2022) identified variations in the SRL capacities of female and male students. Again, Korlat et al. (2021) in a study found a difference in learning engagement among girls and boys. Despite these differences in sex, Mahama et al. (2022), reported that reduced levels of SRL and academic engagement were exhibited by student-teachers. These reports should be a source of worry to educators

and other relevant stakeholders since low levels of academic motivation, SRL, and academic engagement affect academic gains.

Student level of academic motivation is reported to differ significantly in the programmes they offer (Adcroft, 2010; Koludrović & Ercegovac, 2015). Bene, Lapina, Birida, Ekore and Adan (2021) also found the levels of self-regulation among Science, Technology, Engineering, and Mathematics (STEM) and non-STEM university Students to differ. Similarly, Farajollahi and Moenikia (2010), reported a difference in student SRL when the computer-based group and print-based group were compared. These reports point to the relevance of academic motivation, SRL, and academic engagement to the success of every academic endeavour. The sustainability of the various programmes of study in schools may depend on the successes being chopped in academics by past students since literature has shown a strong relation between academic motivation, SRL, and academic engagement alongside academic success.

Prospective educators enrolled in Colleges of Education, who are preparing for roles in the foundational levels of the education sector, the bedrock of every country's education needs to succeed in their academics. Considering the critical role that would-be teachers will play in the lives of basic school pupils, it is imperative that they are motivated in their academics, employ SRL strategies and be academically engaged to enable them to succeed in their academics. Their success will translate into success in their students' academics (Wurf & Croft-Piggin, 2015).

Statement of the Problem

Studies on student academic engagement have contributed immensely to activities or issues responsible for high-quality learning experiences of students in educational programmes at the higher level (Shah & Cheng, 2019; Tadese, Manathunga, & Gillies, 2017; Veiga, 2016). Success in academics is viewed as a critical outcome of academic engagement. It positively and substantially impacts the academic accomplishment of students in higher education (Essiam, 2019). Some researchers argue that students experiencing low levels of or a lack of academic engagement may face lasting challenges, including lower levels of academic achievement, higher incidence of incivility, elevated risk of failure, increased absenteeism, and a greater probability of school dropout (Banahene, Okyere, & Mensah, 2020; Lassiter-Dennis, 2020; Lee, Smith, Croninger, 1997; Noohi, Abaszadeh, & Maddah, 2013; Sinatra, Heddy, & Lombardi, 2015; Steinberg, Brown, & Dornhusch, 1996). It is further argued that such students may be inactive, relaxed, bored, could easily give up, and act out undesirable sentiments including anger, blame, and denial (Gregory & Kaufeldt, 2015). However, some researchers argue that teachers can shape students' disengagement in classroom engagement by creating facilitative motivating learning environments (Christenson, Reschly, & Wylie, 2012; Mercer & Dörnyei, 2020; Skinner & Pitzer, 2013).

In education at the highest level, researchers and policymakers alike view student engagement as a favourable element. Highlighted in the United Kingdom Higher Education White Paper titled 'Students at the Heart of the System' (Cardwell & Michelle, 2011), the value of student engagement is

emphasized as a vital component in fostering learning communities within higher education. This view was buttressed by Boakye-Yiadom and Martin (2015). They posited that education at a higher level is to groom students to effectively interact and relate well in the society in which the institution is located. Therefore, the quality of engagement teacher-trainees receive in their training determines the kind of behaviour they will put up in their professional practice. High levels of academic engagement of the teacher-trainees predicts success in their training and acquisition of professional behaviours which they can pass on to their students in future during their practice as teachers.

The idea of student academic engagement has been studied in connection with students' academic motivation, viewed as a motivational process (Skinner, Pitzer, & Steele, 2016) which means that academic motivation influences student academic engagement. Students' academic engagement can be reduced when there is a lack of motivation (Ghasemi, Moonaghi, & Heydari, 2018). Also, research suggests a positive connection between the academic motivation of undergraduate students and SRL (Schmeichel, Crowell, & Harmon-Jones, 2016) implying that individuals who practice self-regulation are more receptive to motivational incentives. A dearth of motivation can impede the cultivation of self-regulatory techniques, like goal setting, planning, and behaviour monitoring (Ben-Eliyahu, 2011).

A critical analysis of the literature reveals that academic motivation, SRL and academic engagement are critical in the education enterprise for students' success at various levels of education. Nonetheless, Atuahene, Yusheng, Bentum-Micah, and Owusu-Ansah (2019) raised concerns about the widely observed decline in the academic success of students in Ghana,

particularly in basic public schools. This concern persisted even before their study, as UNICEF-Ghana (2013) reported that more than 65% and 84% of primary six learners in Northern Ghana, including the Upper West Region, lack proficiency in English language and Mathematics, respectively. This report is corroborated by the 2016 Ghana National Education Assessment report which indicated that 71.5% of learners in basic four and 48.5% of those in basic six could not make the cut-off line for minimum proficiency in mathematics within the region. Just 5% of basic four and 10.5% of basic six learners were proficient, marking the lowest proficiency rates in the country (Ministry of Education, Ghana Education Service, & National Education Assessment Unit, 2016). Derkong-Dery (2018) however indicated that Government of Ghana over the years have taken steps to change the narrative on student success in their academics by way of improving school infrastructure as well as training qualified teachers. Despite government intervention, Derkong-Dery (2018) remarked that poor quality education still persists especially in Ghana's Upper West Region. This seems to suggest that the interventions alienated critical variables like academic motivation, SRL and academic engagement of teachers which are essential to teachers' training for improved academic performance of students.

Also, an engaged teacher is better placed to influence students' academic engagement, academic motivation, and SRL, ultimately fostering academic achievement (Caldwell et al., 2011; Chuter, 2020; Knowles, 1999). This presupposes that a disengaged teacher will not effectively promote an engaged classroom thereby discouraging students from staying in school. This view was held by Amalu and Abang (2016). They reported that factors

contributing to primary school pupils' absenteeism in Cross River State included, among other things, a lack of interest in school activities. This assertion is not different from the Upper West Region as Kangsangbata (2008), adduced that 20% of children on the streets of the Wa Municipality went there on their own instead of being in school.

In the view of Derkong-Der (2018), government intervention in student academics has not yielded much success, particularly in the Upper West Region as the 2021 national census revealed that the region fell below the national averages of 18.4%, 9.5%, 9.1%, and 16.6% for children 4-5years, 6-11years, 12-14years and 15-17years respectively, who are not attending school. The regional percentages however stood at 28.0% (4-5 years), 17.2% (6-11years), 17.9% (12-14years) and 25.6% (15-17years) (Ghana Statistical Service, 2022). Meanwhile, empirical evidence suggests that academic motivation, SRL and academic engagement which government intervention have alienated can equally contribute to student stay and success in school. For instance, Cinches, Russell, Chavez and Ortiz (2017), stated that teachers who develop academic motivation, SRL and academic engagement during their training are better placed to assist their learners develop similar characteristics which will boost academic success and retention. However, the extent of academic motivation, SRL, and academic engagement possessed by teacher-trainees, which would enable them to establish an environment conducive to enhancing the interest and academic success of their prospective students, remains unclear. Therefore, conducting a study to examine the academic motivation, SRL, and academic engagement of students in Colleges of Education is imperative.

Furthermore, studies conducted on academic motivation, SRL and academic engagement yielded contradicting results. Dramanu and Mohammed (2017) found a difference in male and female student academic motivation but Sivrikaya (2019) found no difference in male and female academic motivation. Also, Appiah-Kubi et al. (2022) assessed the effect of gender on SRL and academic engagement and found a difference in self-regulatory capacities in gender but no difference in academic engagement. Mahama et al. (2022) reported low levels of SRL and academic engagement in a study on personality traits as predictors of these factors. Bene et al. (2021) identified differences concerning the levels of self-regulation in STEM and non-STEM university students but Chen (2012) reported no disparity in the use of SRL among college students pursuing early childhood education in Taiwan. These findings present an inconsistency in the literature and more research is needed.

Also, it has been observed that prior research has primarily examined the individual relationships between academic motivation, SRL and academic engagement. However, there appears to be a lack of understanding of how these factors interact within the context of specific academic programmes of study. Studies conducted by researchers such as Johns (2020), Sukor, Ayub, Ab and Halim (2021) have examined some of these factors in relation to specific subjects or course areas, rather than the overall programme of study. Moreover, the few studies that have primarily been carried out were done in the Western world. Therefore, there is a gap in research within this specific context, particularly in Ghana's Upper West Region, where no studies seem to have been done in relation to this topic. This gap created in literature needs to be filled so that the perspective in the region on these variables can be brought

to light hence the need to examine the association between academic motivation, SRL, and academic engagement among students in Colleges of Education in the Upper West Region.

Purpose of the Study

The study investigated the association between academic motivation, SRL, and academic engagement of students in Colleges of Education within the Upper West Region. The study sought to:

1. Determine whether there is a relationship between academic motivation and academic engagement of students in Colleges of Education;
2. Determine whether there is a relationship between self-regulated learning, and the academic engagement of students in Colleges of Education;
3. Determine whether there is a relationship between academic motivation and self-regulated learning, of students in Colleges of Education;
4. Examine whether programme of study predicted academic motivation, self-regulated learning, and academic engagement of students in Colleges of Education;
5. Examine whether there is a difference between male and female students in Colleges of Education in terms of (a) academic motivation, (b) self-regulated learning, and (c) academic engagement.

Research Hypotheses

The study tested the following hypotheses:

1. H_0: There is statistically no significant relationship between academic motivation and academic engagement of students in Colleges of Education.

   H_1: There is statistically significant relationship between academic motivation and academic engagement of students in Colleges of Education.

2. H_0: There is statistically no significant relationship between self-regulated learning and academic engagement of students in Colleges of Education.

   H_1: There is statistically significant relationship between self-regulated learning and academic engagement of students in Colleges of Education.

3. H_0: There is statistically no significant relationship between academic motivation and self-regulated learning of students in Colleges of Education.

   H_1: There is statistically significant relationship between academic motivation and self-regulated learning of students in Colleges of Education.

4. H_0: Programme of study will not predict academic motivation of students in Colleges of Education.

   H_1: Programme of study will predict academic motivation of students in Colleges of Education.

5. H_0: Programme of study will not predict self-regulated learning of students in Colleges of Education.

H_1: Programme of study will predict self-regulated learning of students in Colleges of Education.

6. H_0: Programme of study will not predict academic engagement of students in Colleges of Education.

   H_1: Programme of study will predict academic engagement of students in Colleges of Education.

7. H_0: There is statistically no significant difference between the academic motivation of male and female students in Colleges of Education.

   H_1: There is statistically significant difference between the academic motivation of male and female students in Colleges of Education.

8. H_0: There is statistically no significant difference between the self-regulated learning of male and female students in Colleges of Education.

   H_1: There is statistically significant difference between the self-regulated learning of male and female students in Colleges of Education.

9. H_0: There is statistically no significant difference between the academic engagement of male and female students in Colleges of Education.

   H_1: There is statistically significant difference between the academic engagement of male and female students in Colleges of Education.

Significance of the Study

The findings may be helpful to tutors at Colleges of Education who are involved in training teachers as they may come to understand the importance

of imparting aspiring teachers with essential skills that encourage academic motivation, self-regulated learning, and academic engagement.

The findings will benefit would-be teachers in Colleges of Education by helping them understand the critical role of academic motivation, SRL and academic engagement in their academic work. This knowledge will not only promote their academic success but also enable them to foster the academic achievement of their future students.

The findings may benefit teachers as they may influence the teaching methodology teachers adopt in the cause of their teaching when they chance on this research.

The study's results can aid Ghana's Ministry of Education as well as the Ghana Education Service in designing intervention schemes and practices that enhance students' academic motivation, SRL, and academic engagement.

The study's outcome will enable curriculum developers like National Council for Curriculum and Assessment (NaCCA) to build academic motivation, SRL, and academic engagement into the curriculum which will enable implementers at all levels of education to consciously inculcate them into their students to boost academic success.

The outcomes of the study will enrich the current body of literature on students' academic motivation, self-regulated learning (SRL), and academic engagement which will help other researchers in this area thereby contributing to closing the knowledge gap, especially in Ghana's Upper West Region.

Delimitations

The study's focus was limited to the three Colleges of Education in Ghana's Upper West Region, specifically targeting second-year students

within these institutions. This restriction was due to the implementation of the tracking system in the Colleges of Education, allowing only two-year groups to be in the school at the same time and access to the third- and fourth-year groups posed a challenge. The study variables were delimited to academic motivation, SRL, and students' academic engagement in Colleges of Education. Additionally, the study encompassed Early Grade, Primary Education, and Junior High Education programmes offered within the Upper West Region's Colleges of Education.

Limitations

A drawback of this study was that the self-report nature of the questionnaire employed posed a potential for response bias, as respondents might have altered their responses to present themselves in a favourable light.

Also, data collection was conducted at the time students were preparing for their end-of-semester examination. Due to this, they may not have taken the time to fully understand the requirements of each item and may have simply chosen a response without considering it carefully. This might have impacted the outcome of the study negatively.

Additionally, data collection focused solely on second-year students, thus excluding other year groups. This may have compromised the representativeness of the results on the population hence, interpretation of the results should be done with caution.

Key Terms Definitions

Within this study the following essential terms have been defined:

Academic motivation

It is a student's desire or effort invested into academic work and school experience geared towards academic success (Hulleman, et al., 2016).

Self-regulated learning (SRL)

It constitutes an active, constructive process in which learners establish goals aligned with their learning plans and implement measures to oversee, regulate, and control their cognition, motivation, and behaviour, thereby successfully achieving these objectives (Pintrich, 1999).

Academic Engagement

It is the effort students put into academically purposeful activities (Kuh, Cruce, Shoup, & Kinzie,2008).

Pre-service teacher/teacher trainee/would-be teacher

A student at the College of Education training to become a teacher

Organisation of the Study

The research is divided into five chapters. In the first chapter, the background to the study, the statement of the problem, the purpose and specific objectives, research hypotheses, the significance of the study, delimitations, limitations, the definition of terms, and the overall organisation of the study are covered. Following this chapter is chapter two which is dedicated to the review of literature on theoretical framework, conceptual review and empirical review. Subsequent to this is chapter three which presents the research methodology, including the research design, study area, population, sampling technique, data collection instruments, data collection procedures, data analysis, and ethical considerations. Results and the discussion of results are presented in chapter four. Chapter five provides a

summary of the study, draws conclusions, and offers recommendations for action and further research.

CHAPTER TWO

LITERATURE REVIEW

The study investigated the association between academic motivation, SRL, and academic engagement of students in Colleges of Education within the Upper West Region. The chapter presented existing studies on academic motivation, SRL, and academic engagement of learners. In this chapter, literature was reviewed in line with theoretical framework, conceptual review, and empirical review.

Theoretical Framework

Basic Psychological Need Theory (BPNT) by Ryan (1995)

The Basic Need Theory is a sub-theory that is part of the broader model of self-determination theory. Self-determination is an individual's ability to make choices and be able to control one's own life and manage his or her affairs. Introduced by Deci and Ryan (1985), self-determination theory (SDT) functions as a motivational model that posits the existence of intrinsic motivation and extrinsic motivation as two crucial forces influencing individuals and their behaviour. As self-determination theory research has progressed, various phenomena in motivation such as intrinsic motivation, and questions about the influence of extrinsic rewards on intrinsic motivation have come to light. Empirically investigating these motivational phenomena has been necessary for understanding them, leading to the emergence of six sub-theories aimed at explaining them and addressing related research questions (Reeve, 2012). In the view of Reeve, among the six mini theories is the Basic Psychological Need Theory (BPNT).

BPNT concerns itself with the fundamental psychological needs: autonomy, competence, and relatedness. These needs form the basis of students' inherent and proactive inclination towards intrinsically motivated behaviours. This inclination propels them to pursue novelty, embrace optimal challenges, enhance their abilities, explore, and actively partake in the learning process.

Autonomy is the psychological need to perceive one's behaviour as originating from and supported by oneself; it represents the internal approval of one's behaviour (Deci & Ryan, 1985). It is the situation where individuals feel the need to be masters of their lives and have control over their behaviours. Thus, the belief that one can choose their behaviours and actions. According to Reeve, Nix and Hamm (2003), students are satisfied with their need for autonomy to the degree that they can partake in learning activities with a feeling of psychological freedom, internal locus of causality (Cobb-Clark,2015), and the perception of control over their actions. Learners who are motivated intrinsically and tend to have some level of autonomy in their behaviour, tend to engage with learning more actively unlike learners who look up to teacher praise or grades or other external recognition (Deci & Ryan, 1985; Lee & Hannafin, 2016).

Competence is the psychological need for the desire to excel in the individual’s endeavours and interactions with the surroundings. It is characterized by the intrinsic motivation to employ an individual's abilities while actively facing and mastering challenges within the environment (Deci, 1975). It is the kind of need that is related to knowledge, skills, and

achievement where individuals want to boost their competence for a task relevant to them.

Relatedness is a psychological need that represents the desire to form strong emotional connections and secure bonds with others, indicating a longing for emotional closeness and active involvement in affectionate, supportive relationships (Deci & Ryan, 2008). It is where individuals have a fundamental need to belong and form meaningful relationships with others. Students feel their relatedness needs are met when they genuinely connect with others in a caring and mutually supportive manner.

The basic needs theory emphasizes that the key principle underlying psychological well-being is addressing core psychological needs. According to Vansteenkiste, Niemiec and Soenens (2010), these psychological needs serve as sources of motivation and are seen as vital elements that daily life events must meet for an individual to achieve overall psychological, physical, and social well-being. Psychological needs are recognised to influence students' academic motivation, and foster student's demand for autonomy as well as their competence and performance (Chen & Jang, 2010; Schunk & Zimmerman, 2012).

Also, Shillingford and Karlin (2013) adduced that learners will get involved with activities that enable them to put to use their skills and interests and get constructive feedback devoid of criticisms. Learners who are motivated intrinsically and tend to have some level of autonomy in their behaviour, tend to engage with learning more actively unlike learners who look up to teacher praise or grades or other external recognition, are extrinsically motivated (Deci & Ryan, 1985; Lee & Hannafin, 2016). The

Basic Need Theory is appropriate for the study because would-be teachers need to have mastery and control over their behaviours (autonomy) so they can acquire knowledge and perfect their skills of teaching (competence) which will enable them to connect well with others and their future students (relatedness) since they are training to become teachers and will be playing critical roles in the lives of pupils. College of Education students need to understand their academic motivation to enable them to pursue their personal goals and succeed in their academics. This will position them well to better help their future students.

Student Involvement Theory by Astin (1984)

In the view of Astin (1984), student involvement is the level of energy students invest physically and psychologically into their academic experience. It is shown in the level and quality of efforts students commit to their academics and other academic-related activities demonstrated in an institution. The higher a student is committed to their academic work and that of their institution, the higher the possibility of being successful in their academics and hence the more likely they will remain and complete school. Students who are successful in their academics or otherwise are described on a continuum to be involved in acts like the amount of time devoted to preparing for courses, teaming up with other people to learn, attaining set goals for education, and the level of involvement with their college environment. In the view of Astin (1993), a student's academic success to a large extent is accounted for by the level of involvement of students with their academics.

The theory encourages educators to pay attention to students' activities, considering their motivation, amount of time, and effort invested in the

learning endeavour, instead of focusing on themselves. The theory shifts attention toward the motivation and behaviour of the learner instead of emphasizing the subject matter and instructional techniques used within classrooms. Students who are involved in school work have a high propensity to be academically engaged which is likely to boost academic success.

Involvement theory by Astin (1983) comprises five principles, namely:

1. "Involvement refers to the investment of physical and psychological energy in various objects. The objects may be highly generalised (the student experience) or highly specific (preparing for a chemistry examination)." (Astin, 1999, p. 519). An academically engaged college of education student will devote his or her time to prepare for his or her academics like reading ahead and studying for class while a student who is not or less engaged academically, may not devote time and effort to meet his or her academic expectation.
2. "Regardless of its object, involvement occurs along a continuum; that is, different students manifest different degrees of involvement in a given object, and the same student manifests different degrees of involvement in different objects at different times" (Astin, 1999, p. 519). Students engaged in their academics differently at different levels, intensity and at different times. They are unique and will not get involved at same level and degree.
3. "Involvement has both quantitative and qualitative features. The extent of a student's involvement in academic work, for instance, can be measured quantitatively (how many hours the student spends studying) and qualitatively (whether the student reviews and comprehends

reading assignments or simply stares at the textbook and daydreams)" (Astin, 1999, p. 519). Students in Colleges of Education need time and effort to successfully go through the programme due to the involving nature of their training to enable them to become better teachers in the future.

4. "The amount of student learning and personal development associated with any educational programme is directly proportional to the quality and quantity of student involvement in that programme" (Astin, 1999, p. 519). Students in the College of Education who devote and submit themselves to their education and training are more likely to succeed as teachers in the classroom.
5. "The effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement" (Astin, 1999 p. 519). College of Education authorities may rely on research recommendations on the academic engagement of students to implement practices that can get students involved in their academics as they will be engaged so to boost their success and their completion.

Conceptual Review

Academic Motivation

Motivation is an inborn tendency whose occurrence is attributed to the influence of a variety of sources, including external and internal stimuli, factors within the environment, goals, and internal conditions (Amrai, Motlagh, Zalani, & Parhon, 2011) which inspire people to strive to attain particular needs and goals in life. It is a concept that aids in explaining the

reasons behind people's actions (Schunk, 2009). Motivation awakens, directs, and sustains behaviour as a result of its innate nature (Woolfolk Hoy, 2015). It is a variable that is relevant throughout various stages of learning and practice. Amrai et al. (2011) postulated that motivation as a concept is interpreted differently by different schools of thought. In the educational setting, motivation is considered as a three-dimensional phenomenon that comprises a person's intentions and goals, emotional response to situations, and beliefs in one capability and competence to succeed. Also, motivation is described as comprising intrinsic, extrinsic, and amotivation components, where intrinsic and extrinsic motivations complement each other in the motivational process (Deci et al., 1991).

Intrinsic motivation is where a person participates in an activity due to the inherent joy and fulfilment it brings. Intrinsic motivation is essential for teaching and learning (Forsyth & McMillan, 1991) as it propels learning. Learners who possess internal motivation to acquire knowledge typically demonstrate a deeper comprehension of the subject matter and value their overall learning experience. This makes them more persistent in the pursuit of their goals (Carlton & Winsler, 1998; Merlin, 2003). Within the purview of intrinsic motivation, individuals have motivation to intrinsically seek knowledge, accomplish certain goals, and undergo particular stimulation. This presupposes that the goal orientation of a student will lead that student to get involved in an endeavour the student is prepared to learn (Song & Grabowski, 2006).

External/extrinsic motivation is a drive that pushes an individual into pursuing a particular independent goal activity (Mohamadi, 2006). It is a

source outside of the individual that pushes the individual to attain goals. Deci and Ryan (1985) introduce the organismic integration theory that seeks to explain the various components of extrinsic motivation. Within this theory, these components include; external regulation which intimates that a student may get involved in academic activities to receive rewards or praise from significant others. Also, Deci and Ryan identified introjected regulation as another aspect of extrinsic motivation where a student engages in an academic activity but does not fully own it. Deci and Ryan (2000) additionally characterize identified regulation as another facet of extrinsic motivation, where a student may engage in a specific academic behaviour or activity because they perceive it to be useful. On a continuum, students exhibiting identified regulation within extrinsic motivation are more prone to achieve high academic success when contrasted with those who are externally regulated. Unlike intrinsic motivation, extrinsic motivation emphasizes the advantages of an activity rather than the pleasure derived from it.

Amotivation is characterized by the inability of an individual to perceive the association between their actions and the resulting outcomes (Ratelle, Guay, Vallerand, Larose, & Senecal, 2007). A student exhibiting this form of motivation will display no interest or not put forth any effort towards academic activities. A lack of motivation gives room for a lack of mobility which makes it difficult for one to achieve the desired goal (Demir & Budak, 2016).

Academic motivation represents a distinct facet within the wider construct of motivation, serving as a pivotal element that shapes success and academic accomplishment (Green, Nelson, Martin, & Marsh, 2006;

Linnenbrink & Pintrich, 2002). It pervades tasks and leans towards achieving success, while also varying in its assessment of students' performance (Masaali, 2007). According to Masaali, academic motivation refers to a pervasive tendency toward success in completing tasks and spontaneously evaluating performance. Its significance lies in the positive impact it has on students' attitudes toward academic tasks, time and energy allocation, and their endeavours to fulfil academic responsibilities (VanZileTamsen & Livingston, 1999). Academic motivation is generally regarded as relevant for learning and success. In the view of Pintrich (2003), students who are not motivated may drop out of school, while those driven by academic motivation invest additional time in their studies. They carry out activities such as rehearsing information learnt and connecting it with prior knowledge, and seeking clarification through questions. Motivated students exert more energy and persevere with challenges confronting them. They undertake tasks without hesitation, spend their leisure time reading books, tackle problems and puzzles, and actively participate in various projects (Schunk, 2009).

Studies have shown that social factors, including culture, socio-economic status, personality, and family dynamics, exert considerable influence on both extrinsic and intrinsic motivation (Anderson, Woods-Wells, Amal, Bass, & Simpson, 2018; Kazakova & Shastina, 2019; Masaali, 2007). Similarly, fostering a positive teacher-student relationship, ensuring effective communication, promoting collaborative group work, providing choices, designing engaging learning activities, and delivering significant and valuable content are all pivotal in boosting and enhancing student motivation and learning (Saeed & Zyngier, 2012). Additionally, in the view of Kusurkar, Ten

Cate, Vos, Wester and Croiset (2013), students who exhibit autonomy in their academic motivation not only adopt effective working strategies but also invest greater effort in their studies, potentially leading to success in various aspects of life.

Self-Regulated Learning

Self-regulated learning (SRL) involves a multifaceted process that contains cognitive, motivation, and context-based elements (Boer, Donker-Bergstra, & Kostons,2012). It is viewed as an active and intentional procedure in which learners setup learning goals and consciously oversee, manage, and direct their cognition, motivation, and behaviour (Pintrich, 2004; Wolters, Pintrich, & Karabenick, 2005) by using metacognition which forms the basis of SRL processes (De Boer, Donker-Bergstra, & Kostons,2012). Self-regulated learning is the systematic activation, application, and maintenance of learners' cognitions, motivations, behaviours, and affect, all directed towards achieving learning goals (Schunk & Greene, 2018; Sitzmann & Ely, 2011). In the view of Pintrich (2000); Zimmerman (2002, 2008) and Zimmerman and Schunk (2011), SRL involves students actively engaging in their learning process by establishing goals, monitoring, and controlling their cognition, motivation, and behaviour. This active involvement aims to effectively translate their mental abilities into tangible performance for the achievement of their goals.

Also, Zumbrunn, Tadlock and Roberts (2011), stated, that SRL is a procedure which aids learners in controlling their thinking, behaviours, and emotions to effectively go through with their learning encounters. This mechanism is activated when a student deliberately engages in actions and

processes to acquire information or skills. Individuals classified as self-regulated learners are typically described as reflective individuals equipped with a range of strategies, enabling them to intentionally oversee their learning behaviours (Wolters, 2003). Learners should possess foundational SRL skills, acknowledged as essential skills (Matthews, Marulis, & Williford, 2014), and it is imperative that these skills are nurtured as part of a fundamental educational goal within schools (Sontag & Stoeger, 2015). This involves students proactively taking steps to regulate their thinking, emotions, and behaviours to achieve their learning goals (Schunk & Zimmerman, 2010). Wolter (2003) suggests that learners who self-regulate are believed to possess adaptive beliefs and mindsets that fuel their motivation to participate in and persevere with academic tasks. These individuals typically exhibit high self-efficacy, concentrating on enhancing their mastery level, and regard the school material they learn as engaging, valuable, and practical knowledge (Pintrich, 2000; Schunk & Ertmer, 2000; Wigfield, 1994).

Pintrich (1999) formulated a self-regulated learning (SRL) model encompassing cognitive strategies, metacognitive strategies, and resource management strategies. Within cognitive strategies, there are four elements which include: rehearsal, involving the repetition of previously mentioned items; elaboration, assisting students in creating internal connections among items to be studied; organisation, which involves students' capacity to select information thoughtfully and establish relations among various parts of information; and critical thinking, indicating the capacity to address problems and evaluate them critically based on specific standards (Pintrich, Smith, Garcla, & McKeachie, 1991).

Metacognitive strategies encompass two facets: metacognitive awareness, which involves being cognisant and reflective of one's cognition, including knowledge and thought patterns; and metacognitive monitoring and control, which involves the planning, observing, and managing an individual's learning process (Pintrich et al., 1991).

Resource management strategies are categorised into self-management and external management strategies. Self-management strategies refer to learner's capacity to regulate their time, effort, and learning environments (Zhu & Doo, 2022) whereas external management strategies cover skills such as seeking assistance, working with peers, and navigating interactions (Pintrich et al., 1991).

Becoming a self-regulated learner entails adeptly selecting and applying appropriate SRL strategies to effectively address various learning encounters (Schunk & Zimmerman, 2010). Additionally, self-regulated learners must possess an awareness of their cognitive abilities and a clear understanding of how to employ diverse strategies for controlling and directing their cognition (Flavell, 1979). Such learners are adept at efficiently managing their study time, efforts, and attention. They demonstrate proficiency in collaborating with classmates and, when necessary, requesting assistance from teachers, parents, or fellow students (Schunk et al., 2010).

Zimmerman and Campillo (2003) characterised SRL procedures as both triadic and cyclical, highlighting the interdependent relationship between self-regulation, environmental influences, and behavioural events. This triadic reciprocity emphasizes how an individual's problem-solving strategy is shaped by a blend of their own beliefs in their abilities, the surrounding environmental conditions including

feedback from instructors, and their previous behaviours, such as successfully solving a prior problem.

In the view of Zimmerman (2002), the SRL model comprises three cyclic stages: forethought, which includes the processes and beliefs present before learners start their learning activities; performance, it includes the processes that happen throughout the learning experience; and self-reflection, which involves the processes occurring following the learning activity. In the forethought stage, learners participate in task analysis processes, where goals are set and strategies devised. Additionally, they develop beliefs that foster self-motivation, such as confidence in their abilities (self-efficacy), beliefs about the outcomes of their efforts, personal interest or value in the task, and orientation towards achieving their goals. During the performance stage, learners employ self-control processes including visualization, self-guidance, focusing attention, and employing task-specific strategies. Also, they actively observe their progress through techniques like self-recording and self-experimentation. In the self-reflection stage, individuals engage in self-assessment, including evaluating their performance and attributing causes to their outcomes. They also react to their performance, experiencing emotions such as satisfaction or dissatisfaction, and respond in adaptive or defensive ways. These stages repeat cyclically throughout the learning process, with the self-reflection stage subsequently influencing the forethought stage of the next cycle in the SRL structure (Zimmerman, 2002).

Students exhibit self-regulation to the extent that they actively engage in metacognitive, motivational, and behavioural processes within their learning endeavours (Zimmerman, 1986). They employ self-initiated thoughts,

emotions, and behaviours to achieve the learning objectives. Definitions of SRL may vary among researchers based on their theoretical perspectives. While constructivists may prefer definitions involving covert processes behaviourists may lean towards definitions emphasizing overt responses. However, common to these definitions is the assumption that students recognize the possible advantages of SRL processes in improving their academic performance.

Another common feature found in many definitions of SRL is the presence of a self-directed feedback loop during the learning encounter (Carver & Scheier, 1981; Zimmerman, 1989, 2000a). This loop involves a continuous cycle where students assess the efficiency of their learning approaches or tactics and react to this feedback in diverse manners, which can include subtle shifts in self-awareness or noticeable adjustments in behaviour, such as switching from one learning strategy to another. Phenomenologically inclined researchers describe the feedback loop based on covert perceptions like self-esteem, the concept of self, and self-actualization (McCombs, 1994). In contrast, those holding operant views, as proposed by Mace, Belfiore and Hutchinson (as cited in Zimmerman & Schunk, 2008), prefer overt descriptions involving actions such as self-recording, self-reinforcement, and self-controlling actions.

Also, a shared element among all SRL definitions includes description of how students select specific self-regulation processes, strategies, or responses, with considerable variation among theorists regarding the motivational component of SRL. Operant theorists argue that choices in SRL are primarily driven by external reward or punishment contingencies. In

contrast, phenomenologists suggest that learners' motivation is largely driven by the desire to enhance their self-esteem or self-concept. Theorists with views in the middle ground attribute student motivation to factors such as the desire for achievement, goal fulfilment, self-efficacy, and the integration of new concepts. The capacity of self-regulation theories to address both learner's motivation aspects and learning processes, distinguishes them from other educational frameworks, making them especially relevant for educators working with students who lack motivation (Zimmerman et al., 2008).

Academic Engagement

Academic engagement, alternatively referred to as learner, student, or school engagement, is a multifaceted and intricate concept that varies across different learning environments (Conduit, Karpen, & Farrelly, 2016; Fredricks, Blumenfeld et al., 2004; Kahu, 2013; Martin, Ginns, & Papworth, 2015; Pöysä, Vasalampi, Muotka, & Lerkkanen, 2018; Shernoff, Kelly, Tonks, & Anderson, 2016). Various definitions have been espoused for academic engagement to mean an active involvement, dedication, and attentiveness, in contrast to apathy as well as disinterest (Newmann, Wehlage, & Lamborn, 1992).

The construct is examined and defined through four distinct perspectives which include; the behavioural perspective, which considers students' actions and the practices of educational institutions; the psychological perspective, which concentrates on students' emotions, actions, thoughts, and motivations; the socio-cultural perspective, exploring the social and cultural environments where students grow and are educated; and the

holistic perspective, which integrates the behavioural, psychological, and socio-cultural viewpoints (Kahu, 2013).

However, three essential subconstructs are widely known and have appeared in many studies in the area of research (Conduit et al., 2016; Kahu, 2013). The subconstructs include emotional, behavioural and cognitive engagement. Emotional engagement pertains to learners' interest for learning tasks and their feeling of connection within the school community (Fredricks et al., 2004; Kahu, 2013). Also, behavioural engagement reflects the time and effort dedicated by learners to academic tasks, and interactions with educators and peers, including other school-related endeavours (Fredricks, et al., 2004; Kahu, 2013). Lastly, cognitive engagement refers to the deep learning practices that students employ in their educational journey (Fredricks et al., 2004; Kahu 2013). This type of deep learning is described as students' capacity to link fresh information with what they already know or experiences (Filius et al., 2019), rephrase and summarize what they have learned, establish connections between concepts, and create novel ideas stemming from the instruction provided (Fredricks et al., 2004; Pintrich et al. 1991).

Accordingly, engagement is seen by Hallberg and Schaufeli (2018) as a favourable state of well-being or satisfaction. This state is marked by vigour, dedication, and absorption (Hallberg & Schaufeli, 2006). Vigour entails elevated energy levels and mental agility, expressed through a readiness to invest effort and a commitment to persist in overcoming challenges. Dedication reflects deep engagement in an individual's work, which can inspire feelings of pride, challenge, inspiration, and significance. Absorption is the experience of being deeply immerse in your work, enjoying it without

being conscious of the passage of time (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002). Similarly, Randall and King (2018), viewed academic engagement as the student state of mind and the level of dedication and absorption of the learning content which is evidenced in persistence, affect and energy exerted when faced with academic challenges.

Individuals who are engaged, exhibit elevated energy levels, enthusiasm, and a profound connection to their learning activities (Bakker, Schaufeli, Leiter, & Taris, 2008; Maslach, Schaufeli, & Leiter, 2001). Their time and effort dedicated to academic activities, both within and beyond the classroom, demonstrate their strong devotion to learning (Schlenker, Schlenker, & Schlenker, 2013; Salamonson, Andrew, & Everett, 2009).

Empirical Review

Relationship between Academic Motivation and Academic Engagement

Dogan (2015) explored the predictive factors of academic performance, particularly focusing on the influences of student engagement, academic self-efficacy, and academic motivation. The study employed a correlational design to explore these relationships. The study includes a sample of 578 students attending Grades 7 through 11 in Turkish middle and high schools. Data were collected using Student Engagement Scale, Academic Motivation Scale, and the Expectancy of Self-efficacy for Adolescents Scale. Correlational analysis results revealed that the components of school engagement (cognitive engagement, emotional engagement) are related to academic motivation positively but behaviour engagement related to academic motivation was negatively. This finding seems to contradict other studies.

Li, Yu, Qin, Lu and Zhang (2016) investigated the linked between academic motivation and academic engagement of college students in the college English Language course in China. The study utilised the descriptive survey. The study involved a conveniently sampled group of 101 freshmen in their college studies. The study employed the engagement scale and MUSIC model of academic motivation inventory for data collection. In a correlation analysis between student engagement and the MUSIC model, it was observed that the elements of the MUSIC model exhibited positive and significant correlations with each other. Moreover, all the elements of the MUSIC model demonstrated positive and significant association with the engagement construct, except for the caring component. The study employed a convenience sample, potentially lacking representativeness of the broader population, thus restricting the generalisability of the findings to students in Upper West Region's Colleges of Education.

Saeed and Zyngier (2012), explored how motivation influences student engagement. The integration of Self-Determination Theory (SDT) was utilised in exploring the interconnection between student motivation and engagement. This was coupled with the utilisation of Schlechty's Student Engagement Continuum to assess how intrinsic and extrinsic motivation influences various types of student engagement. A case study-based qualitative research approach was employed for data collection. Grade five and six elementary school students in Melbourne-Australia were purposively used as participants of the study. The Patterns of Adaptive Learning Scales (PALS) survey was distributed to students using various interactive methods such as student surveys and focus groups to gather comprehensive data. This approach yielded

detailed and triangulated information. The results suggested that a notable proportion of students who identified their motivation as intrinsic or integrated regulation also demonstrated genuine engagement in their education. Those leaning towards extrinsic motivation engaged in ritual and retreatist forms, while those with both intrinsic and extrinsic motivation displayed authentic, ritual, retreatist, and rebellious forms of engagement. The study employed a qualitative approach using elementary school children but this study will adopt the quantitative approach using students in Colleges of Education.

In another study conducted by Xiong, Li, Kornhaber, Suen, Pursel and Goins (2015), they examined the relationship among student motivation, engagement, and retention using structural equation modelling in a Pennsylvania State University massive open online course (MOOC). A sample of 17,359 learners took part in the research. A pre-course survey questionnaire with a 5-point Likert scale was administered to measure learners' motivation and their engagement in the MOOC. Structural equation modelling was utilised for data analysis, revealing a strong predictive connection between learner's motivation and engagement in the course. The study's setting is characteristically different from the Upper West Region, implying that the sample conditions are distinct from those of the present study.

Jeffries (2018) explored the connection between academic motivation and academic success in university students. A sample of 78 first year students in a course of Psychology 1A, in the University of Adelaide were involved in the study. The instruments employed for data collection included the Raven's Advanced Progressive Matrices Short-Form, the Openness Conscientiousness Extraversion Agreeableness Neuroticism Index Condensed scale (OCEANIC),

and the Academic Motivation Scale College Version. Correlational analyses revealed significant associations between choice satisfaction, course satisfaction, and engagement, and intrinsic and extrinsic motivation, and amotivation. However, the study's findings may have limited applicability to students in Upper West Region colleges of education due to the limited sample size.

Acosta-Gonzaga and Ramirez-Arellano (2022) investigated the role of scaffolding on motivation, engagement and learning outcomes in advanced education. The study involved 220 students in a public university enrolled for science and social science courses in Mexico. Data collection involved the utilisation of the Student Engagement and Disaffection in School questionnaire, the Motivated Strategies for Learning questionnaire, and the Instructors used Scaffolding Strategies. Analysis of data was carried out with the aid of structural equation modelling. The findings revealed a positive connection between motivation and behavioural disengagement, including metacognitive, cognitive and learning engagement.

Relationship between Self-Regulated Learning and Academic Engagement

Several studies have explored the association between SRL and the academic engagement of learners across various regions globally. For instance, Setiani and Wijaya (2020) investigated the connection between SRL and student engagement among college students with multiple roles in Indonesia. A correlational design was implemented in the study. The convenient sampling was utilised in sampling 206 college students at X University, which consists of 114 males and 92 females. Data was gathered

using a Self-Regulated Learning instrument from Universitas Tarumanagara and the Student Course Engagement Quotient (SCEQ). The hypothesis was tested using the Pearson r. The study uncovered a significant positive link between SRL and student engagement. The study's finding is relevant to the proposed study but the result is based on a non-probability sample which was conveniently sampled and may not reflect the study population in the Upper West Region.

A study by Gaxiola-Romero, Gaxiola-Villa, Corral-Frías and Escobedo-Hernández (2020) explored positive learning environments, academic engagement, and SRL of students in high schools in Mexico. A cross-sectional design was adopted using random numbers to sample 166 freshmen in a high school with a Mean age of 15.2 (S.D. = .43). Data was gathered through a questionnaire, and Structural Equation Modelling was utilised for data analysis. It came to light that academic engagement and self-regulated learning had a connection and it accounted for 30% of students' SRL. However, the study used freshmen in high school who may not be familiar with and well-adjusted in their school environment and thus restricts the generalisation of the results to students who are of different Mean ages within the Upper West Region's Colleges of Education, a gap this study intended to fill.

Estévez, Rodríguez-Llorente, Piñeiro, González-Suárez and Valle (2021), conducted a study that investigated the characteristics of school engagement. They further examined how the different profiles of engagement are linked to academic performance and self-regulation. The Latent Profile Analysis (LPA) was employed in the study. The study conveniently sampled

717 primary school year five and six leaners as participants for the study. Correlational analysis revealed a positive connection between self-regulation and the dimensions of engagement, particularly in managing the environment, time, information, and seeking help. Conversely, negative correlations were observed in connection to deficits in self-regulation. The study used children as its sample and their engagement and self-regulation may differ. They also conveniently sampled and the result may not represent the cross-section of the population and therefore will be problematic in generalising the results to a different population.

Pardo, Han and Ellis (2017) carried out a case study that integrated indicators of SRL and engagement to predict academic performance using online learning events among university students. Qualitative data on engagement were collected while quantitative data were collected on SRL. The study involved 145 students in a course. The correlation between qualitative variables and indicators measuring engagement with online learning events was examined. The study reported that positive self-regulation exhibited a significant relationship with the majority of quantitative variables, implying that learners who used effective self-regulated strategies were more likely to engage frequently in online learning events. However, negative self-regulation did not display any statistically significant correlation with quantitative variables, indicating no association between negative self-regulation and engagement with academic task. The study looks at freshmen undergraduate students in a particular course as a case for the study. The findings cannot be said to represent students offering different courses as their majors which this study sought to address.

LeMay (2017), carried out a study at Georgia Southern University to explore the academic engagement, motivation, self-regulation, and achievement among second-year students. A correlational design was adopted with a sample of over 460 students in the study. The study adapted items from MSLQ and SCEQ in a questionnaire to collect data on academic engagement, academic motivation and SRL. Correlation analyses carried out between engagement and self-regulation revealed a positive association. The study adapted items from MSLQ which was originally designed to measure SRL, to measure academic engagement and self-regulation which may not be broad enough to cover diverse issues under academic engagement. Also, the context of the study characteristically differs from the Upper West Region.

Relationship between Academic Motivation and Self-Regulated Learning

Soufi, Damirchi, Sedghi and Sabayan (2013) conducted a study that focused on developing a structural model to predict academic achievement in Iran. The model incorporated factors such as SRL strategies, autonomous academic motivation, academic self-concept, and global self-esteem. A random sample of 417 students in high school comprising 191 and 266 females and males respectively, made up of the study. Instruments employed to gather data included the Self–Concept Questionnaire, Global Self-Esteem Questionnaire, Academic Motivation Scale, and Learning Strategies Questionnaire. Correlational analysis indicated that the relationship among all variables, encompassing SRL strategies and autonomous academic motivation were significantly related. The study occurred a site distinct from the Upper West Region and therefore the need for a context-based study.

Mustapha et al. (2023) conducted an experiment on Students' Motivation and Effective Use of SRL in Nigerian higher institutions of learning on the Learning Management System Moodle Environment. The research made use of the quasi-experimental design with a pre-test post-test. The research randomly assigned 98 students to the control and treatment groups. Data were collected using Pintrich MSLQ to assess students' motivation levels and perceptions. Additionally, the Moodle environment was exposed to students to assess the effective implementation of SRL. The collected data underwent analysis using descriptive statistics along with independent t-test. The results revealed that subjects in the experimental groups performed better compared to those in the control group. Undergraduate students were motivated to employ SRL strategies when using the Moodle Learning Management System which enhanced various aspects of the teaching-learning process in an online context. Consequently, incorporating SRL methods with undergraduate students contributed to an improvement in their learning experience and motivation. The study was experimental in nature but the current study did not use pre-test post-test since it is not an experimental study.

Mahmoodi, Kalantari and Ghaslani (2014) explored learners' SRL, motivation and language achievement of EFL in Iranian. A sample of 130 learners between the ages of 14 and 40 of which 77 were males and 53 females. A five-point Likert scale was employed to collect data on SRL and motivation. Frequencies and Pearson r were used to gather data. It was revealed from the Pearson r analysis, that motivation and SRL were significantly related. The study concentrated on language learners. To obtain a

broad understanding of the association between the variables, learners who major in different areas of study need to be studied which this study sought to do.

Çetin (2015) conducted a study on academic motivation and SRL in predicting college academic achievement. A correlational design was adopted to determine whether academic motivation and SRL have a predictive value on students' GPA in Early Grade Education programme. The study purposively sampled 166 students from Georgia University, USA, as participants. Data collection involved the utilisation of academic motivation scale and the SRL scale. Pearson r aided the data analysis which uncovered an association exists between academic motivation and SRL. The sample for the study was purposively sample. A randomly sampled participants need to be studied so results can be compared.

In a longitudinal investigation, Ning and Downing (2010) explored the interdependent connection between academic performance, self-regulation and motivation. Employing a social cognitive perspective, the study explored the reciprocal interplay between motivation and self-regulation constructs and assessed the effects they have on academic performance. The study employed the Learning and Study Strategies inventory to collect two different datasets. The first data set was collected at the beginning of their undergraduate study with 664 participants and 15 months of undergraduate study with 581 participants at a university in Hong Kong. A T-test was conducted to determine the missing mean score. It was revealed as not statistically significant. Using data from two measurement waves, the cross-lagged structural equation model revealed a significant bidirectional influence,

indicating that students' self-regulation significantly predicted their subsequent motivation. The study used social cognitive theory but this study employed the basic need theory which is under the broad theory of self-determination. Also, this study is not a longitudinal study but at a point, data was gathered from a cross section of the population.

Manguiat et al. (2022) carried out a study to assess whether academic motivation and SRL of first-year college students can predict their academic performance. The research utilised a correlational predictive design, involving 51 students in their freshman year in Colegio de San Juan de Letran - Manila, who were purposively sampled for the study. Data for the research were gathered through online administration of the Academic Motivation Scale and Academic Self-Regulated Scale. The Pearson r was employed to explore the association between academic motivation and SRL. It came to light that academic motivation and SRL were not significantly linked. The study used only 51 first-year students, which is relatively small compared to this study. Also, students in their freshman year were used for the study and findings may not be representative of students in Colleges of Education within the Upper West region.

Hariri, Karwan, Haenilah, Rini and Suparman (2021), undertook a study in Indonesia on the learning motivation of learners and its potential as an indicator for predicting learners' learning strategies. A survey design was employed, and a sample of 408 randomly selected public high secondary students participated. The Motivated Strategies for Learning Questionnaire (MSLQ) aided data collection, and the analysis was conducted through multiple linear regression. The study's findings revealed that student academic

motivation positively correlated with their learning strategies; student motivation significantly predicted learning strategies. The study's population was high school students but this study involved students in Colleges of Education.

Kim and Jang (2015) carried out a study to explore the possible changes in medical students' motivation and SRL over time. The study included a sample of 43 students in their freshman year of medical school in South Korea. The study employed the Motivated Strategies for Learning Questionnaire (MSLQ) to collect data on students in their freshman year and at the beginning of their second year. The Wilcoxon signed-rank test was employed to assess changes in participants' MSLQ scores between Years 1 and 2. The findings suggested that a significant increase in participants' motivation scores corresponded with a significant decrease in their SRL scores after completing Year 1. The research demonstrates that as medical students experience increased motivation, they tend to employ fewer self-regulated strategies over time. The results are in contradiction with other findings that noted a positive correlation.

Programme of Study and Academic Motivation

Maurer, Allen, Gatch, Shankar and Sturges (2013) carried out a study comparing student academic motivation across three-course disciplines. The study employed a non-experimental design and selected 806 undergraduate students through convenience sampling. The data collection process involved using a modified version of the Academic Motivation Scale. Correlational analysis and MANOVA were applied in analysing collected data. The study's result indicated that the subscales of the academic motivation scale uncovered

that students who enrolled in Human Anatomy and Physiology, Physics and Nutrition had a statistically significant difference between them in their academic motivation. The research shows that the programme of study can predict whether a student can be academically motivated or not. The study took place in Statesboro in the USA which is demographically different from the Upper West Region and its result cannot be generalised to this study population.

Ghaznavi, Keikha and Yaghoubi (2011) investigated the influence of Information and Communication Technology (ICT) on educational enhancement in Khash city, Iran. A sample of 320 learners in high school third grade were randomly selected using a multi-stage method for the study. A constructed Likert-type scale questionnaire was employed in data collection. Mann-Whitney U, Chi-square, descriptive statistics, and Kruskal Wallis were tools employed for analysing data. It was revealed that effectiveness of Information and Communication Technology extends to enhancing educational motivation, refining questioning skills, fostering a research-oriented mindset, and elevating academic grades. Chi-square results revealed that Information and Communication Technology influences students secondary school educational motivation in their third grade. The findings were derived from a self-constructed questionnaire which has not been validated by other researchers. The validity of the results may be questionable and problematic in generalising results. Also, the study sampled senior high school students, whose developmental characteristics differ from those in colleges of education. This study employed widely validated instruments on College of Education Students.

Duo-Terron, Moreno-Guerrero and Marin-Marin (2022) carried out research on Information and Communication Technology motivation using students in their sixth grade during the pandemic, examining the influence of gender and age. The experimental method with a descriptive and correlative design was employed. Instrument that aided data collection was the Programme for International Student Assessment for ICT scale. The sample for the study included 924 students in primary school grade six in Ceuta ages between 10 and 13. Data analysis was carried out using means and standard deviation, chi-square and Cramer V to determine relationships and multiple linear regression for prediction age effect and gender on students' motivation in ICT. The findings indicated that motivation in students and their commitment to ICT were medium when compared with the average of the scale. The study was an experimental design that used 10 and 13-year-olds but the current study used college of education students in a correlational study.

Hu and Luo (2021) examined the academic motivation among senior students taking rehabilitation-related profession as a major in China. The design employed in the research was cross-sectional survey with 58 students conveniently sampled for the research. The Academic Motivation Scale was used as a tool for collecting data which was analysed with the help of ANOVA. The results indicated that students who study a specialised curriculum exhibited elevated levels of intrinsic and extrinsic motivation compared to general curriculum students. This shows that the study programme of students may predict their academic motivation. The study result emanates from a sample conveniently selected which is relatively small

and not representative enough to be generalised to students enrolled in Upper West Region's Colleges of Education.

Programme of Study and Self-Regulated Learning

A comparative study by Bene et al. (2021) examined the levels of self-regulation and academic performance between STEM and non-STEM university students. The research employed the causal-comparative design in examining variations in the levels of self-regulation among four student groups pursuing Business Administration, Engineering, Law and Computer Science. A sample of 150 students was selected from both STEM and non-STEM major male student populations. The collection of data utilised the Self-regulation questionnaire (SRQ). The data underwent analysis through MANOVA, revealing a significant difference in self-regulation and Grade Point Average when considering students of Law, students of Computer Science, students of Engineering, and students of Business Administration collectively. ANOVA was also performed to examine the different dependent variable, including Positive Actions and Difficult Times (subscales from the SRQ), including Grade Point Average. A statistically significant result was obtained when Engineering, Law, and Business Administration students on the scale were compared. However, students of Computer Science and those pursuing other fields of study had their Difficult Times subscale not being significantly different. Additionally, all university majors had their Positive Actions subscale of self-regulation not having statistically significant differences among them. The differences between these programmes in terms of their SRL show that programme of study may be a predictor of student's SRL. However, the study used only male participants for the study which

cannot be generalised to a population that is made up of both males and females.

Johns (2020) investigated self-regulation in the context of first-semester calculus. Four hundred twenty-four students took part in the study. The study employed the Calculus Concept Readiness (CCR) assessment, ACT/SAT Mathematics scores, MSLQ, and students' final course grades as data collection tools to collect data. The study findings suggested that self-regulatory aptitudes predict final grades above and beyond mathematics aptitude. Self-regulation predicted 48% of the variance in the Calculus final grade. Also, differences occurred in measures of self-regulation amongst high and underachievers as well as low and overachievers. The course affected how students regulated their learning. The research was carried out with a single undergraduate course and the results cannot provide enough grounds for generalisation on the SRL of learners in the Upper West Region enrolled in Colleges of Education offering different programmes.

A study by Arcoverde, Boruchovitch, Góes and Acee (2022), delved into the SRL of prospective Natural Sciences and Mathematics teachers, exploring self-efficacy, learning strategies, socio-demographic factors. The study was carried out in Piaui, Brazil, utilising an exploratory cross-sectional design with descriptive and correlational elements. A sample, 220 would-be teachers admitted into teacher education programmes in Chemistry, Biological Sciences, Mathematics, and Physics participated. Data for the study were gathered using the Learning and Study Strategies Inventory and the Self-efficacy for Learning Form. Mann-Whitney test and Kruskal-Wallis were used as tools for statistical analysis. The results of the study indicated variations

among areas of specialisation in students' self-reported utilisation of learning and study strategies. Students specialising in the Physics programme demonstrated superior coping with anxiety. Individuals in the Mathematics licentiate programme exhibited more positive attitudes toward academic success, while those in the Chemistry licentiate programme reported more effective time management. Students specialising in the Biological Science programme exhibited notably reduced learning and study strategies compared to their peers in other licentiate areas. These results seem to suggest that programme of study influences the SRL of students in those programmes. Nevertheless, the study was conducted in Latin America, a context that is different from the Upper West region. A study from different contexts is needed for comparison.

Vanderstoep, Pintrich and Fagerlin (1996) conducted a study to investigate variations in SRL across academic disciplines among college students. The sample of the study included 380 students pursuing humanities, social science, and natural science in three different colleges. Data collection involved the use of the ordered-tree technique as well as the Motivated Strategies for Learning Questionnaire (MSLQ) to assess the knowledge of learners in a course. Additionally, a self-report measure captured their motivational beliefs and utilisation of self-regulatory strategies at both the commencement and conclusion of the semester. To analyse differences in knowledge, motivation, and self-regulation based on achievement levels and disciplines, the study employed three achievement levels derived from the final course grades and conducted ANOVA. The findings indicate that knowledge of students in a course, motivation, and self-regulation serve as

effective factors in distinguishing high performers from low performers in social and natural science courses, but this differentiation is not observed in humanities courses. Analysis performed for each discipline revealed that MSLQ differs among students in the natural science, social science, and humanities divisions. Nine MSLQ variables exhibited significant differences based on the final grade in Natural Science. Seven MSLQ variables exhibited significant differences based on the final grade in the domain of Social Science, while only two MSLQ variables demonstrated significant differences in the final grade for Humanities. The different programmes seem to be indicative of students' utilisation of SRL. The study was however conducted using disciplines and contexts different from the current study.

Programme of Study and Academic Engagement

Panwar (2018) compared Foreign and American undergraduate students' engagement using STEM and non-STEM programmes. The study utilised information from the 2015 National Survey of Student Engagement, focusing on both first-year and final-year student responses. They employed the quantitative study approach using the comparative design. Data were analysed using frequencies and cross-tabulations. The study employed multiple regression to investigate the association between STEM and non-STEM majors, along with a series of control variables, and student engagement. Ordinary Least Squares (OLS) regression, with Huber-White clustered standard errors, was utilised to analyse the nested data structure at the institutional level. Also, the interaction effect test was used to analyse the relationship between foreign and American student status and engagement in both STEM and non-STEM majors. The findings indicated that American

STEM students had a higher collaborative learning engagement compared to their international counterparts. Nonetheless, significant differences did not exist in this aspect between American and foreign non-STEM students. Also, both first-year and senior American STEM students exhibited greater involvement in collaborative learning activities when they were compared with their foreign counterparts. On the other hand, the engagement in collaborative learning activities between American first-year and seniors and foreign first-yesr and seniors in non-STEM fields did not show significant differences. This shows that programmes of study contribute to the academic engagement of the student. The study used first-year students who may still be in the process of adjusting to the school environment, and final-year students who are on the verge of exiting, possibly facing distractions from various activities as they prepare to complete school. This study, however, used second-year students who have adjusted to the college environment and are not about to exist but are poised for their academics.

Simpson (2014) examined the impact of student engagement on retention and compared male undergraduate STEM majors with their counterparts in non-STEM fields. The research utilised the descriptive survey design using 692 male students as a sample in the study. The study used the National Survey of Student Engagement (NSSE), specifically the College Student Report, to evaluate the impact of five student engagement benchmarks on college student success. The data were examine using ANOVA and ANCOVA. The findings indicated that the STEM and non-STEM majors did not significantly differ on the four benchmarks of student engagement, including student-faculty interaction, academic challenge level, enriching

educational experiences, and active and collaborative learning. In this study, programme of study does not predict student engagement since STEM and non-STEM students engaged similarly. However, the study used only male participants and these findings cannot generalised on a population comprising males and females.

Li et al. (2016) investigated academic motivation as well as student engagement in college English Language courses. It was revealed through regression analysis that empowerment and success of the MUSIC model predicted student engagement. They contributed 32.6% of the variance in student engagement in the English Language course. The study's context varies from the present one, highlighting the necessity for conducting the study to facilitate comparisons. Also, the study was carried out using a course and not a programme which this study sought to do.

Sukor et al. (2021) explored the connection between academic performance and students' engagement in a food science course, focusing specifically on non-food science students. The research utilised a correlational design and involved a randomly selected sample of 84 undergraduate students majoring in non-food science participating in the research. A questionnaire on students' engagement was administered for data collection. Analysis of data was done with the aid of means and standard. The study reported that the mean score on the subscales was different due to the differences in their programmes of study. The study's sample does not adequately represent the College of Education student population in the Upper West Region, potentially limiting the generalisability of the findings.

Sex and Academic Motivation

Sadd, Tek and Baharom (2011) carried out a study on SRL exploring the differences in gender in terms of motivation and learning strategies among students pursuing science in Malaysia. The research adopted the causal-comparative design. The study participants were 185 form-four science students comprising 84 males and 101 females. The data collection instrument was an updated edition of the MSLQ. In a MANOVA analysis, it was revealed that the motivation and learning strategies of science students did not significantly vary when it comes to gender. However, the study identified a gender distinction favouring females in the field of science, while no such difference was observed in mathematics and additional mathematics.

Hakan and Munire (2014) researched academic motivation, exploring gender, domain, and grade differences in Turkey. The study involved a sample of 750 undergraduate students, consisting of 386 males and 364 females. The data were gathered using a Turkish-adapted version of the Academic Motivation Scale. Descriptive statistics and independent sample t-test aided the data analysis. The research uncovered that male and female differs in their academic motivation.

Schultz-León (2013) explored the predictive factors of academic motivation and resilience in Latino students, focusing on gender and family variables. The study purposively sampled 165 Latino Students comprising 67 males and 98 females in grade six class through to grade eight class. Data were collected using the third edition of the Test of Nonverbal Intelligence and Woodcock-Johnson Test of Achievement, Authoritative Parenting Index, Significance Other Academic Support Scale, and Academic Motivation Scale.

Correlational and hierarchical multiple regression analysis showed that gender did not serve as a significant predictor of academic motivation. In another study, Tudor and Ridpath (2019) explored the predictive role of gender in academic and athletic career motivation among NCAA Division I college athletes. The research involved a participant sample of 309 students. The data collection utilised the Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2) and the Student Athlete's Motivation toward Sports and Academics Questionnaire (SAMSAQ). The researchers employed regression analysis to analyse the data which revealed task-involving climate, gender, and race to predict significantly, academic motivation explaining 21% of its variance. Specifically, gender contributed to 25% of the increase in academic motivation, with females exhibiting higher academic motivation (M= 4.85, SD= 0.40) compared to their male counterparts (M=4.47, SD= 0.47). These studies present contradictory results and more studies are needed for a stand to be taken.

Khan, Ilyas and Waheed (2022) explored gender and its influence on academic motivation in learners from the Malakand District in Pakistan. The study purposively sampled 160 learners, aged between 12 and 18 years as participants for the study. Data collection utilised the academic motivation scale, and the analysis was conducted through correlational methods. The study findings revealed a significant gender influence on students' academic motivation, with females demonstrating higher academic motivation compared to males. The study used a purposeful sample of ages 12 to 18 years. Their characteristics are different and the findings cannot be extended to students in Colleges of Education.

Bugler, McGeown and St Clair-Thompson (2015), investigated differences in academic motivation and classroom behaviour of adolescents based on gender. The study employed 750 students constituting 384 male and 366 female secondary school students with ages ranging from 11- 16 years as participants for the study. Data was gathered with the aid of high school Student Motivation and Engagement Scale in addition to the revised short version of the Conners' Teachers Rating Scale. ANOVA was used as a data analysis tool. It was revealed that gender significantly differs in academic motivation with females recording higher levels of academic motivation.

Sex and Self-Regulated Learning

Velayutham, Aldridge and Fraser (2012) carried out a study on motivation and self-regulation in science learning with a focus on gender disparities. The study was carried out in Australia and included 1,360 students from grades 8, 9, and 10 constituting the sample for the study. Data was gathered using Students' Adaptive Learning Engagement in Science, and the analysis was done using structural equation modelling. The research results revealed a significant gender difference specifically in task value associated with SRL, and this distinction was specifically observed among male students. The setting of the study is different from this study and the sample characteristics are not identical. The study's results cannot be generalised on this study since conditions are not the same.

Nikoopour and Khoshroudi (2021) studied the styles used by students in learning and the SRL of English as a Foreign Language (EFL) learners, exploring whether a student's gender and skill level play a significant role. The research utilised a correlational design using the multi-stage sampling

technique to sample 200 students studying TEFL, Literature, and Translation studies. Data collection involved the utilisation of the Self-Regulation Questionnaire (SRQ), and the analysis was conducted using Pearson r and multivariate analysis. The study's findings indicated that student's gender, SRL and learning styles do not significantly differ between them. The setting of the study differs from this study and its results cannot be generalised on this study but a study from a different context is needed so that the results can be compared based on different contexts.

Yukselturk and Bulut (2009) explored self-regulated online learning with a focus on gender differences. One hundred and forty-five participants took part in the research. Data were gathered using motivated strategies for learning questionnaires. Analysis of data was done using MANOVA and multiple linear regression. The findings indicated no statistically significant distinction in the means of motivational beliefs, SRL, and programming achievement between male and female students. Barta, Tamás, Gálfi and Szamosközi (2021) conducted a comparable study, exploring time perspectives as predictors of online SRL. The research utilised a cross-sectional correlational design, with 210 students participating. The SRL online learning questionnaire guided gathering of data. Data analysis was done using hierarchical linear regression. The findings revealed gender as a key factor of students' self-regulated online learning. These results pose a contradiction, suggesting the need for further investigation through additional studies.Adam, Kartowagiran, Yansa, Marlina and Amiruddin (2022) carried out a study on SRL strategies for delivering remote lectures during the COVID-19 pandemic. The research took place in Indonesia, employing a descriptive survey

approach with 209 graduate students conveniently chosen as participants for the research. A five-point Likert scale on SRL was administered online to gather data. MANOVA and ANOVA were tools that aided data analysis. The study's findings indicated no statistically significant disparity in SRL behaviours between genders. The study made use of a convenient sample and the results may not thoroughly reflect students' self-regulation regarding their learning. Therefore, these findings cannot be generalised to students in region who are enrolled in Colleges of Education.

Sex and Academic Engagement

Hofer, Reinhold, Hulaj, Koch and Heine (2022) conducted an exploratory investigation into how factors that are significant for boys may not necessarily hold the same significance when it comes to girls: examining the relationship between gender and perceived self-determination, engagement, and performance in school mathematics. A sample of 221 7th-grade German students who are averagely 12.84 years old was conveniently chosen to partake in the research. The sample was made up of 106 boys and 115 girls. Data was collected using the behavioural and cognitive engagement questionnaire. The analysis of data involved the use of independent sample t-tests in addition to multiple linear regression. The study indicated that the prediction of behavioural and cognitive engagement did not differ when it comes to gender. The study participants were children and their level of engagement with their academics will not be the same when compared to adult participants hence the need for this study.

Korlat et al. (2021), studied the difference in gender in digital learning amid the COVID-19 pandemic, with a focus on competence beliefs, intrinsic

value, learning engagement, and perceived teacher support. The study was carried out in Austria, involving 19,190 high school students as the study's respondents. The data were obtained online through a questionnaire that assessed competence beliefs, intrinsic value, students' motivation for learning in university, academic engagement, perceived teacher support, and self-concept in gender roles. ANCOVA was utilised in data analysis. The findings revealed that the primary influence of sex was statistically significant indicating that girls' scores on learning engagement were higher compared to boys.

Ganiyu (2021) studied the academic engagement of science students in Nigerian Colleges of Education. It was done at the time of the Emergency Remote Teaching amid the COVID-19 pandemic. The research employed a descriptive survey design, and all six Colleges of Education in Kwara State were purposively chosen for inclusion in the research. The sample consisted of 241 would-be science teachers who transitioned to online Emergency Remote Teaching at the time schools were in lockdown due to COVID-19 pandemic, and the sampling technique involved snowballing. Data was collected with the aid of the College of Education Student Engagement Questionnaire. Data was analysed by calculating means, standard deviations, and conducting independent sample t-tests. The study reported that students' engagement level was generally not influenced by gender. The study used snowballing to sample the participants and the findings might not accurately represent a cross-section of the overall study population. Consequently, the findings cannot be generalised to students within the Upper West Region enrolled in the Colleges of Education. Also, in a study by Dúo-Terrón et al. (2022), males obtained

higher scores in all variables that were analysed. Age and gender predicted ICT use and engagement among sixth-year primary education students. Males demonstrated medium to high levels of ICT use and engagement.

Hartono, Umamah, Sumarno and Puji (2019) conducted a study examining how actively learners in Jember Regency, Indonesia engage in history as a subject in senior high schools. The study focused on analysing the levels of engagement with consideration of both gender and grade levels. The descriptive comparative design with a random sample of 354 students comprising 177 females and males each. The School Engagement Measure (SEM) aided the gathering of data. The gathered data was analysed by calculating means and standard deviations along with conducting MANOVA. The results indicated that student academic engagement differs significantly in terms of gender, with females displaying a higher mean score than males.

Conceptual Framework

The framework pertains to how the study's variables interact with each other. The main study variables are; academic motivation, self-regulated learning (SRL), and academic engagement. A reciprocal relationship is anticipated among the variables. A student who scores high in academic motivation is likely to employ self-regulated learning strategies. This student is likely to demonstrate higher academic engagement. Conversely, a student with a low academic motivation score may tend to utilise fewer SRL strategies, leading to lower academic engagement. It is anticipated that programme of study will predict students' motivation in their academics, SRL and academic engagement. The figure below illustrates the interaction of the variables.

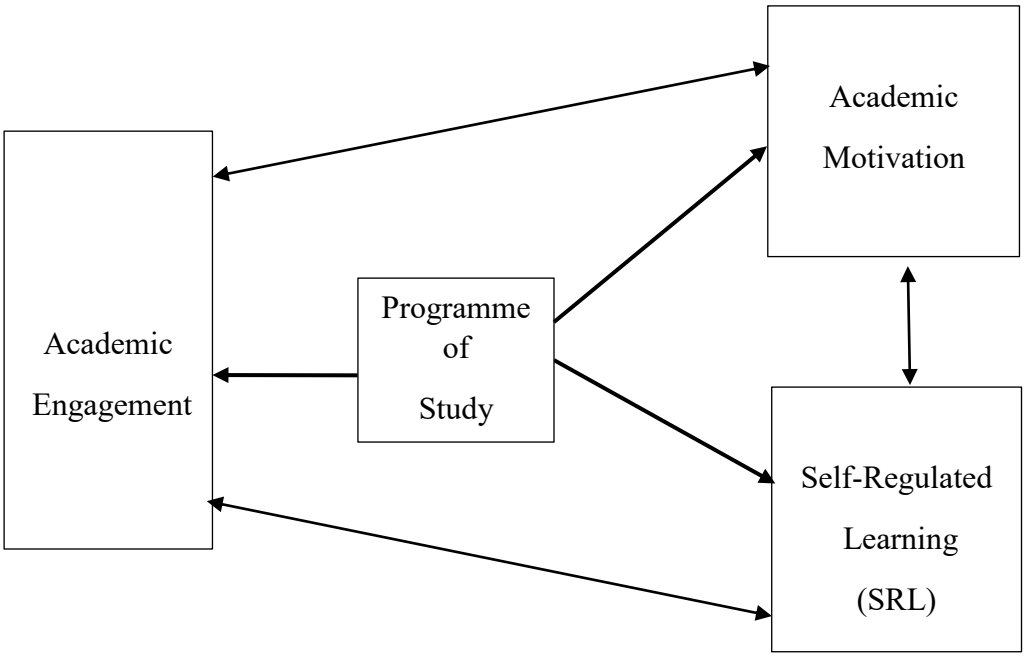

Figure 1: Conceptual Framework

Figure 1 shows that a relationship exists between academic motivation and academic engagement, academic motivation and SRL, and academic engagement and self-regulated learning. It also shows that programme of study will predict academic motivation, SRL, and academic engagement.

Summary of Related Literature Reviewed

The literature reviewed focused on academic motivation, SRL, and students' academic engagement. The literature was reviewed on four (4) sub-headings. These subheadings included the theoretical framework, conceptual review, empirical review and conceptual framework. Theoretical framework looked at two theories that underpin the study. These theories include the Basic Need theory and the Student Involvement theory. Also, conceptual issues in academic motivation, SRL and academic engagement were captured under the conceptual review as a subheading. In addition, a pictorial

representation of the study variables and their relationship is presented in the conceptual review.

Studies conducted empirically on the relationship between academic motivation and academic engagement, SRL and academic engagement, and academic motivation and SRL were reviewed under the empirical review. Most of the studies reviewed revealed that academically motivated students, self-regulate their learning and get engaged with their academics. Thus, a relationship exists between academic motivation, SRL, and academic engagement. However, the majority of studies conducted in other countries outside of the Ghanaian setting did not combine the three variables in their study. It appears in the literature that no study explored the relationship between academic motivation, SRL, and academic engagement in the Upper West region of Ghana. This study therefore examined the relationship between academic motivation, SRL, and students' academic engagement in Colleges of Education in the Upper West Region. The subsequent chapter details research methods employed to conduct the research.

CHAPTER THREE

RESEARCH METHODS

The study investigated the association between academic motivation, self-regulated learning (SRL), and academic engagement among students in Colleges of Education in the Upper West Region. This chapter discusses the methods adopted for the conduct of the study. The section also encompasses details on the research paradigm, research approach, research design, study area, population, sampling procedure, the instrument for data collection, procedures for data collection, data processing and analysis, as well as the ethical considerations addressed during the research process.

Research Paradigm

The study followed the positivist paradigm. It posits the existence of an objective reality that does not depend on human perception and consists of observable, causally related-elements (Pring, 2015). In the view of Pring, this paradigm suggests that scientific methods can be used to define reality once there is agreement on its nature. Research should be replicable and build upon existing knowledge, ensuring that scientific findings can be tested and validated against the real world through empirical procedures and quantitative approaches.

Research Approach

The quantitative approach was employed to undertake the research. This type of research is structured, objective, and systematic in its approach in generating numerical data about the world. It aims to describe emerging situations, events, or concepts, analyse relationships between variables, and

assess the impact of interventions on specific outcomes (Grove, Burns, & Gray, 2012). To achieve these, the study used the correlational design.

Research Design

The correlational research design was used for the research. The design allowed the researcher to uncover whether an association exists between two or more variables and enabled the researcher to establish connections among them (Creswell, 2003). The correlational design aims to ascertain the presence and extent of a relationship between variables rather than explaining the reasons for variations between them (Lochmiller & Lester, 2017). In a correlational study, the researcher refrains from manipulating variables; rather, they measure two or more variables and assess whether there is an association between them. This design was considered suitable for the research as it aimed to investigate the potential relationship among the variables in students of Upper West Region Colleges of Education without manipulating them.

Study Area

The site for the study was in the Upper West Region of Ghana, positioned between longitude 1^0 25" West and 2^0 45" East and latitudes 9^0 30" North and 11^0 North. The region shares a boundary with the Savannah Region to the south, Burkina Faso to the north and west, and the Upper East and North-East Regions to the east. The Upper West Region is Occupying approximately 12.7% of the total land area of Ghana on a stretch of 18,476 sq km (Local Government Service [LGS], 2019). The Upper West Region has six administrative districts and five municipalities with its administrative capital in Wa (LGS, 2019). The Upper West Region is home to 11 tertiary institutions and a number of second-cycle institutions and basic schools. The

primary economic activity in the region primarily revolves around farming. The study was carried out in McCoy, Tumu, and Nusrat Jahan Ahmadiyya Colleges of Education all in the Upper West Region. McCoy College of Education is in the Nadowli-Kaleo District of Ghana's Upper West Region. The district is sandwiched by latitude 10^0 20^1 and 11^0 30^1 north and longitude 3^1 10^1 and $2^1 10^1$ west. It is bordered to the south by Wa Municipality, west by Burkina Faso, north by Jirapa Municipality, and to the east by the Daffiama-Bussie-Issa District. Also, Tumu College of Education is located in Tumu in the Sissala East Municipality of the Upper West Region of Ghana between Latitude 10° 53' 34" north and Longitude 1° 59' 6" west adjacent to the border with Burkina Faso. Nusrat Jahan Ahmadiyya College of Education as one of the study sites, is located in the Wa Municipality between Latitude 10° 4' 1" north and Longitude 2° 28' 51" west. The college is situated east of the square Jubilee Park and the mosque of Ahmadiyya Muslim Mission.

Population of the Study

Population denotes all entities to the group of interest of the researcher that satisfies the requirements for one to be included in a research investigation and findings are generalised (Grove, Burns, & Gray, 2012). Population in the view of Polit and Hungler (as cited in Amedahe & Asamoah-Gyimah, 2019) is the whole or combination of every item, individual, or participants that meet specific criteria, out of which an entity is chosen to represent all of the participants. All the students in the three Colleges of Education constituted the target population of the study. All second-year (level 200) students enrolled in the three Colleges of Education in Ghana's Upper West Region made up the accessible population where the sample was

drawn for the study. The colleges were; Nusrat Jahan Ahmadiyya College of Education, McCoy College of Education, and Tumu College of Education. The population of second-year students from the three Colleges of Education was 951 students. The breakdown is depicted in Table 1.

Table 1: *Population of Second-year College of Education Students*

Colleges of Education	Programme of Study by Sex						
	Early Grade		Primary Education		Junior High Education		Total
	Male	Female	Male	Female	Male	Female	
McCoy	-	-	13	41	109	79	242
Nusrat Jahan Ahmadiyya	45	55	30	74	122	62	388
Tumu	99	118	67	37	-	-	321
Total	144	173	110	152	231	141	951

Source: Database of McCoy, Nusrat Jahan Ahmadiyya and Tumu Colleges of Education (2023)

Sample and Sampling Procedure

A sample in the view of Sarantakos (2005) is a careful selection of units that consists of all the categories of a particular population. In determining the sample size, Borg and Gall (as cited in Cohen, Manion, & Morrison, 2018) proposed that a minimum of 30 cases is required for a correlational study.

A multistage sampling procedure was adopted in the sampling procedure to arrive at the sample. Adane (2013), postulated that a multistage sampling procedure is where the sampling is carried out in steps at each stage.

The researcher purposively chose the Upper West Region's three Colleges of Education as the sampling sites. The purposive sampling was

chosen because it allows the researcher to deliberately include institutions that are most relevant to the study's focus. According to Amedahe and Asamoah-Gyimah (2019), purposive sampling is appropriate when the researcher targets specific groups that provide key insights into the research problem. These colleges are central to shaping the academic motivation, self-regulated learning, and academic engagement of future teachers in the region. Their students' experiences are therefore critical for understanding these phenomena within the context of teacher education. Including all the three institutions aligns with the view of Creswell (2014) that purposive sampling should involve selecting sites that will best contribute to understanding the core research questions. This approach ensured that the data collected was contextually relevant for the study.

A stratified sampling method, incorporating a proportional allocation approach, was utilised to ensure equitable representation of respondents based on college, programme and sex as Leedy and Ormrod (2010) put it, stratified proportionate sampling is a sample deliberately arranged so that its makeup meets the composition of the population. The Cohen et al. (2018), table of sample size determination was employed in determining the sample size so that randomness can be met. They recommended that a population of 950 and 1000 requires a sample of 274 and 278 respectively. The population for the three sites at the time of the study was 951 which was one more than the 950 but less than 1000. The researcher therefore adopted 274 as the study's sample size.

A proportionate quota of participants was allocated to each college based on the sample size of 274. For instance, to select a sample of second-

year students from Tumu College of Education, the total count of second-year would-be teachers in the college was divided by the overall count of second-year would-be teachers across all three colleges of education. The obtained result was then multiplied by the designated sample size (e.g., 321/951 x 274 = 92.486). The figure was rounded to the nearest whole number 92 as subjects are human elements. All quotas that resulted in decimals were rounded up to the nearest whole numbers to obtain 274 participants.

To ensure fair representation of the sample, the researcher calculated for representation in sex for each of the colleges and the programme of study for the students. The sex representation for the programmes of each college was obtained from the vice principals in charge of academics. The breakdown of sex by programme of study for second years in the different colleges at the period of data collection for the study is displayed in Table 1. To determine the sample size for the Early grade programme at Tumu College of Education, the researcher computed it by taking the ratio of the total number of students in the programme by the overall count of second-year students and then computed the product of this ratio and the desired sample size for the college, resulting in 62 (i.e., 217/321 x 92 = 62). For females, the researcher took the ratio of the total number of females by the overall count of second-year Early-grade students and then computed the product of this ratio and the desired sample size for the programme, resulting in 34 (i.e., 118/217 x 62 = 34). The procedure was repeated for all programmes and that of sex in the Colleges of Education.

To secure a sample that accurately mirrors the makeup of the population, the lottery method of the simple random sampling technique was employed to select second-year students in each college to obtain a representative sample. This sampling procedure ensures that all members of the population that were to be studied (target population) got the same chance to participate and also enables high reliability, representativeness, and generalisability of results (Amedahe & Asamoah-Gyimah, 2014).

To achieve this, the researcher labelled small pieces of paper with "yes" and "no", folded them, and deposited them into a bowl. The papers were thoroughly mixed within the bowl, and students from different programmes were directed to draw a piece of paper one by one. If a student selected "yes," they were asked to sit apart from the others, and the corresponding paper was returned to the bowl. For those who chose "no," their papers were also placed back into the bowl. This procedure was repeated until the necessary number of "yes" responses was achieved for a specific sex within a particular programme of study. The study included a total sample of 274 respondents from the Colleges of Education in the Upper West Region which is depicted in Table 2.

Table 2: *Sample population for Colleges of Education*

Variable	Frequency	Percentage (%)
Sex		
Male	139	50.70
Female	135	49.30
Programme of Study		
Early Grade	91	33.20
Primary Education	76	27.70
Junior High Education	107	39.10

Source: Database of McCoy, Nusrat Jahan Ahmadiyya and Tumu Colleges of Education (2023)

Data Collection Instruments

The study adapted the following scales in questionnaire to collect data on academic motivation, self-regulated learning and academic engagement respectively:

1. Academic Motivation Scale (AMS) college version by Vallerand et al. (1992). The scale is composed of 28 items divided into seven sub-scales that assess intrinsic motivation, extrinsic motivation and amotivation. The scale was reported to have an internal consistency of α= .81. The scale is a 7-point Likert-type scale that measures the academic motivation of college students. In this study, the items were adapted with guidance from the supervisor and other experts in the field of measurement and evaluation in the Department of Education and Psychology. In all, the scale consisted of 18 items, each with a 4-point Likert scale included in the questionnaire. The scale was scored based on agreement and disagreement where items took 1 for strongly disagree (SD), 2 for disagree (D), 3 for agree (A), and 4 for strongly agree (SA) to elicit responses to measure the academic motivation of students in the Upper West Region's Colleges of Education.
2. Taiwanese Short Self-Regulation Questionnaire (TSSRQ) as validated by Chen and Lin (2018), comprises 22 items designed to measure goal attainment, mindfulness, adjustment, proactiveness, and goal setting. The scale was reported to have an internal consistency of α =.84. The scale is a five-point Likert-type. The researcher used all the 22 items on the scale and changed all contracted words into the whole word. The Likert-type scale was reduced from a 5 to a 4-point Likert-type

scale. The neutral was removed because respondents may tend to satisfy, engage in ambivalence, or social desirability by hiding behind the neutral (Johns, 2005; Krosnick et al., 2002; Nowlis, Kahn, & Dhar, 2008). For this study, a 22-item 4-point Likert-type was included in the questionnaire. The scale had 12 positively stated items and 10 negatively stated items. They were scored based on agreement and disagreement where positive items took 1 for strongly disagree (SD), 2 for disagree (D), 3 for agree (A), and 4 for strongly agree (SA). The negative items were scored in a reversed manner where 4 took strongly disagree (SD), 3 for disagree (D), 2 for agree (A), and 1 for strongly agree (SA) to measure College of Education students' self-regulated learning in the Upper West Region.

3. University Student Engagement Inventory (USEI) validated by Assunção et al. (2020). The scale has 15 items which measured emotional engagement, cognitive engagement, and behavioural engagement. The scale was reported to have an internal consistency of $\alpha = .81$. The scale is a five-point Likert-type where some of the items were re-worded to suit my respondents. The scale was scored on responses ranging from Never- N, Few times-FT, Sometimes-ST, Most of the time-MT, and Always-A. The responses were scored using 1 for Never, 2 for Few times, 3 for Some times, 4 for Most of the time, and 5 for Always.

In all, the researcher adapted three scales into a questionnaire. To elicit the necessary data, the original scales' items were modified in line with the study's purpose.

A questionnaire was chosen because, in the view of Cohen et al. (2018), it is a commonly utilised tool for gathering survey data, provides organised numerical data, and offers the advantage of being administrable even in the absence of the researcher. To also ensure confidentiality and anonymity, Sarantakos (2005) suggested that utilising a questionnaire in data collection ensures that the respondents are protected.

The final instrument for the study comprised four sections labelled; A, B, C, and D. Section 'A' encompassed background information about students in Colleges of Education. The section asked about students' gender and their programme of study. Section 'B' consisted of 18 items that asked about the academic motivation of students in their second year of College of Education in the Upper West Region. Section 'C' contained 22 items that elicited students' responses on their self-regulated learning which ranged from 'Strongly Disagree' to 'Strongly Agree'. The final section was 'section D' which had 15 items that asked about the academic engagement of second-year College of Education students within the Upper West Region with responses ranging from 'Never' to 'Always'.

Validity and Reliability of the Instrument

Validity refers to the degree to which study data and the methods of collection of the data are considered accurate, honest, and on target (Dambudzo, 2005). An instrument is valid to the extent that evidence can be adduced to back the assertion that it measures the purported construct under investigation. To ensure the content validity of the instrument, experts in the field of Measurement and Evaluation in the University of Cape Coast's

Department of Education and Psychology thoroughly reviewed it. The instrument was modified according to the feedback provided by the experts.

Reliability in the view of McLeod (2007), has to do with the consistency of a measuring test or a research. To ascertain the reliability of the tool, Cronbach's Alpha Correlation Coefficient was utilised to assess internal consistency, generating values within the range of 0.00 to 1.00.

Pre-Testing

The instrument was pre-tested at St. John Bosco College of Education in Navrongo in the Upper East Region. The college was chosen because it shares similar characteristics with the three colleges in the Upper West Region which was the study's setting. A sample of 100 second-year students was randomly chosen to complete the questionnaire. A sizeable and representative sample of 50-100 is adequate for a pre-test to generate real data which can be used to run the analysis for reliability and the sample size for factor analysis should not be less than 100-150 (Cohen et al., 2018). The respondents were asked to verbally discuss with me any question that was ambiguous or difficult to understand. The questionnaires were retrieved from respondents after two days. The questionnaire underwent modifications informed by the feedback the researcher got from the respondents before the final data collection. Pre-test data was analysed to confirm the factors and determine the reliability of the instrument. Confirmatory factor analysis (CFA) is performed to verify a theoretically predetermined factor structure (Pallant, 2010). The factors on the three scales of the questionnaire for this study were confirmed through confirmatory factor analysis. In the view of Pallant, when determining the

factor loadings in a factor analysis, items with factor loading below .30 should be removed before the final data is collected.

Results of pretesting testing

Using IBM SPSS+AMOS software version 21.0, CFA was employed to analyse the factor loadings and the scales' reliability. Tables 1, 2, and 3, as well as Figures 2, 3, and 4, present the CFA results.

Academic Motivation Scale

The results of the CFA conducted on the academic motivation scale are presented in Table 3. The factor loadings for the items Q3 to Q20 in Table 3 are above .30 and are retained as they are within the recommended factor loadings as postulated by Pallant (2010).

The scale's reliability was assessed through the application of Cronbach's Alpha measure of internal consistency. According to Karagoz (2016), the appropriate alpha value for internal consistency is .70 and above. The estimated Cronbach Alpha Correlation Coefficient for Academic Motivation was .88 (see Appendix D). The reliability coefficient for the scale was above .70 which indicated good internal consistency for the scale. Figure 2 shows the model for academic Motivation with the factor loadings for each item.

Table 3: *Factor Loadings of Academic Motivation*

Items	Factor Loadings
Q3	.535
Q4	.700
Q5	.306
Q6	.426
Q7	.480
Q8	.415
Q9	.473
Q10	.614
Q11	.632
Q12	.620
Q13	.595
Q14	.572
Q15	.453
Q16	.495
Q17	.612
Q18	.508
Q19	.578
Q20	.691

Q3-Q20 are some items on the questionnaire (see Appendix C)

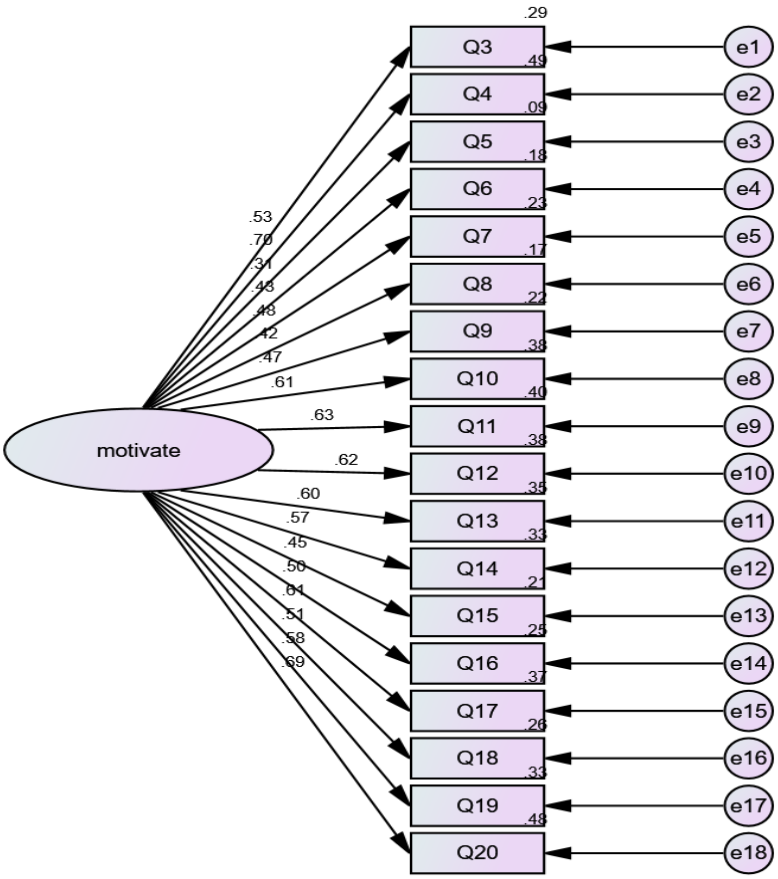

Figure 2: CFA Model for Academic Motivation

Self-regulated Learning

The result of the CFA conducted on SRL is presented in Table 4. The table shows that all of the items had a factor loading of.30 or above except items Q21, Q30, and Q39. The three items were deleted before the final data collection as their factor loadings did not meet the recommended factor loadings (Pallant, 2010).

Table 4: *Factor Loadings for Self-Regulated Learning (SRL)*

Items	Factor Loadings
Q21	.276#
Q22	.722
Q23	.714
Q24	.591
Q25	.548
Q26	.653
Q27	.499
Q28	.335
Q29	.314
Q30	.100#
Q31	.370
Q32	.336
Q33	.499
Q34	.528
Q35	.573
Q36	.590
Q37	.563
Q38	.528
Q39	.247#
Q40	.335
Q41	.332
Q42	.307

Q21-Q42 are items on the questionnaire; #items deleted

To determine the scale's internal consistency, the reliability correlation coefficient was calculated using the Cronbach alpha value. The Cronbach alpha Correlation coefficient for SRL after items Q21, Q30, and Q39 were deleted was .86 (see Appendix D). The reliability coefficient for the scale was above .70 which indicated good internal consistency for the scale. Figure 3 depicts the self-regulated learning model.

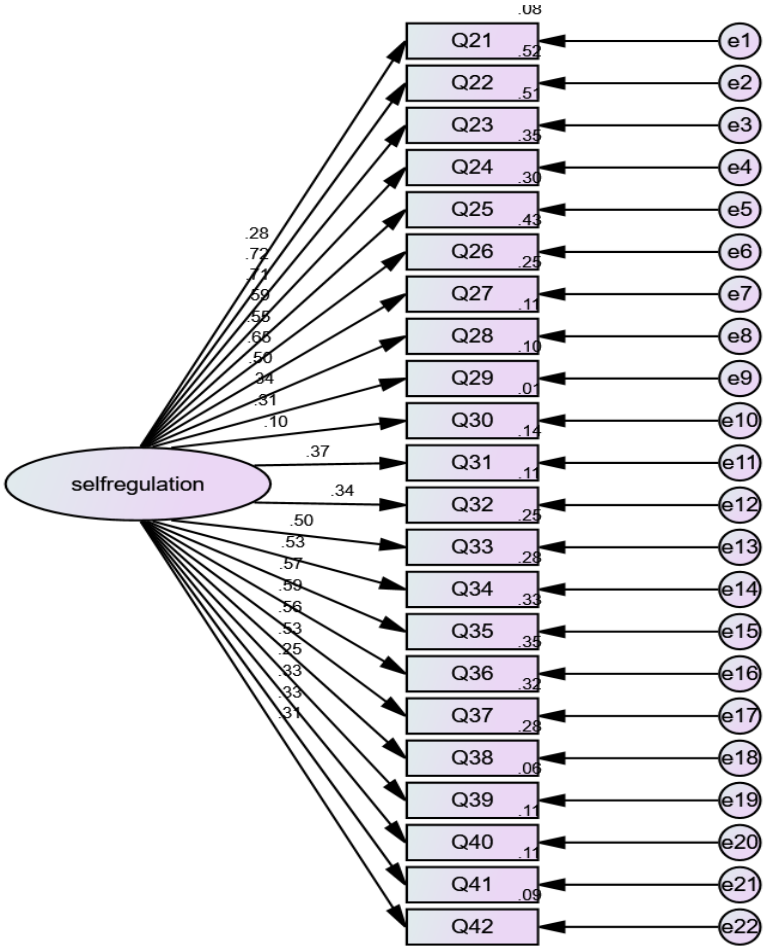

Figure 3: CFA Model for Self-regulated Learning

Academic Engagement

The result of the CFA conducted on academic engagement is presented in Table 5. It's clear from the table that all items, except item Q48, displayed a factor loading of .30 or higher. The item was deleted since its factor loading was below .30 the recommended factor loading (Pallant, 2010).

Table 5: *Factor Loadings for Academic Engagement*

Items	Factor Loadings
Q43	.483
Q44	.506
Q45	.564
Q46	.592
Q47	.655
Q48	-.099#
Q49	.536
Q50	.580
Q51	.508
Q52	.546
Q53	.591
Q54	.403
Q55	.594
Q56	.582
Q57	.600

Q43-Q57 are items on the questionnaire (see Appendix D); #items deleted

The results of the CFA in Table 5 were used to assess the scale's reliability through the application of Cronbach's Alpha measure of internal consistency. The Cronbach alpha Correlation coefficient for academic engagement was .86 after item Q48 was deleted (see Appendix D). The reliability coefficient for the scale was above .70 which indicates good internal consistency for the scale. Figure 4 shows the model for academic engagement.

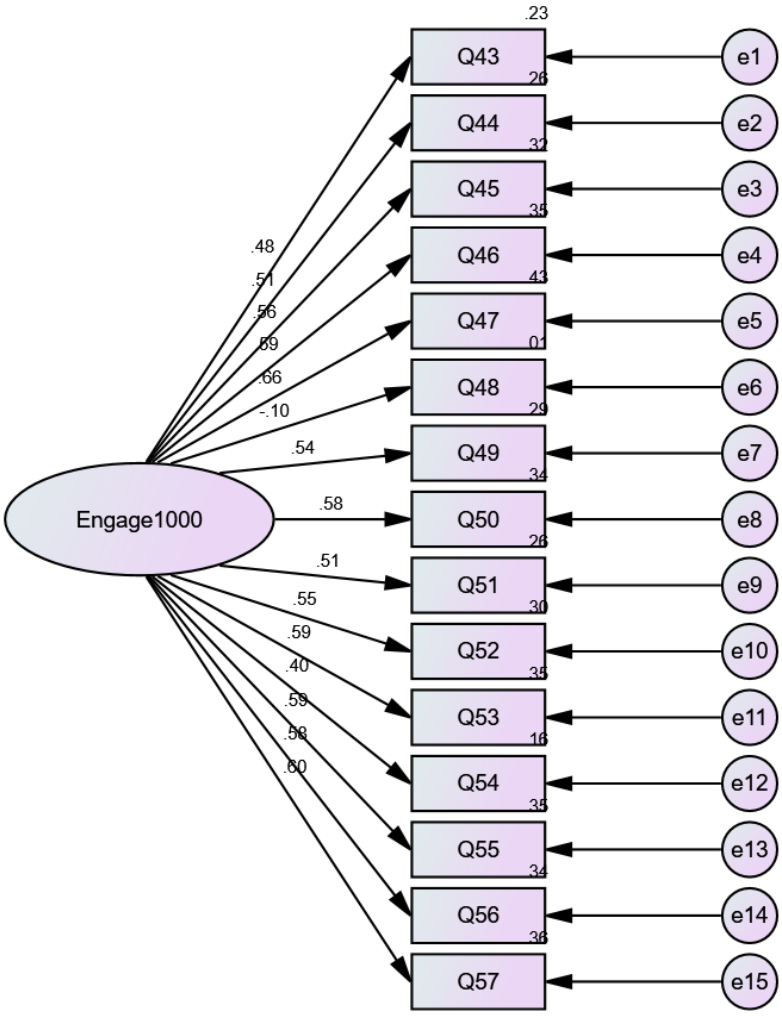

Figure 4: CFA Model for Academic Engagement

Data Collection Procedure

An introductory letter and ethical clearance were obtained from the Department of Education and Psychology and the Institutional Review Board of the University of Cape Coast, respectively (see Appendix A & B). These documents facilitated the process of seeking permission from the principals in Colleges of Education within the Upper West Region to conduct data collection. The study's objectives and significance were communicated to the authorities, and approval was subsequently granted. The respondents were also asked for their consent using a consent form, and they participated voluntarily. A participant could also withdraw in the course of the study if the person

desires to do so. The researcher arranged with the institutions for appropriate dates to administer the questionnaires. The researcher administered the questionnaires to the participants in person. The respondents were given enough time to enable them to respond to the items and return them. The completed questionnaires were retrieved after two days from participants for cleaning and analysis.

Ethical Considerations

Permission was granted by the University of Cape Coast's Institutional Review Board to conduct the study. The American Psychological Association [APA] (2017), ethical guidelines were strictly adhered to during and after data collection in terms of confidentiality, right to withdrawal, voluntary participation, and protection of the dignity of the respondent. The researcher ensured that information obtained from subjects was protected to the best of his ability. The data was stored securely on a computer protected by a password and on a flash drive for safekeeping. Subjects were not forced to be part of the study and they had the opportunity to opt out without facing any penalties. Subjects who gave their consent were sampled to respond to the questionnaire. The findings in this report do not include the names of subjects and their institutions.

Data Processing and Analysis

The gathered data underwent sorting, coding, and entry into SPSS on my computer. Subsequently, the entered data was meticulously cleaned to eliminate errors and outliers. A total number of questionnaires administered was 274. Out of this number, 269 questionnaires were completed and returned representing a 98% return rate. The acquired data were analysed utilising

inferential statistics. Hypotheses 1, 2, and 3 were tested using Pearson r. The Pearson r was appropriate because the hypotheses sought to test the associations between two variables. Hypothesis 4, 5, and 6 were tested using multiple linear regression since three independent variables were used to predict the dependent variable. Conversely, an independent sample t-test was employed to test hypotheses 7, 8, and 9 so that the differences in the mean scores can be examined between male and female students in Colleges of Education concerning their academic motivation, SRL, and academic engagement, respectively.

Chapter Summary

The research adopted a quantitative approach using a correlational design to carry out the study. Second-year students in Colleges of Education in the Upper West Region constituted the accessible population of the research. Employing the multi-stage sampling method, 274 second-year students were selected from 951 second-year students to be involved in the research. Questionnaires were administered to 274 second-year students and five questionnaires were not completed and turned in, which resulted in a 98% response rate. The scales on the questionnaire were adapted and the factors were confirmed with the help of IBM SPSS + AMOS. The reliability and validity issues were looked at during the conduct of the study. Inferential statistics such as Pearson r, multiple linear regression and independent sample t-test were used to analyse the data that was collected for the research.

CHAPTER FOUR

RESULTS AND DISCUSSION

The chapter provides an analysis of the collected data, aligning with the study's purpose. The study investigated the association between academic motivation, self-regulated learning (SRL), and academic engagement among students in Colleges of Education in the Upper West Region. Employing a quantitative approach, the study utilised a correlational research design using a multi-stage sampling method. Respondents provided data for the study with the help of Academic Motivation Scale (AMS), the Taiwanese Short Self-Regulation Questionnaire (TSSRQ) and the University Student Engagement Inventory (USEI). A sample of 269 drawn from an accessible population of 951 second year Colleges of Education students was finally used for the study. The analysis of gathered data was done with the aid of Pearson r, multiple linear regression and independent sample t-test. The respondents' demographic characteristics are described first followed by the analysis of the primary data.

Demographic Characteristics of Respondents

This segment provides analysis of the respondents' demographic characteristics including sex and programme of study. The results are depicted in Table 6.

Table 6: *Demographic Characteristics of Respondents*

Variable	Frequency	Percentage (%)
Sex		
Male	136	50.60
Female	133	49.40
Total	269	100
Programme of Study		
Early Grade	91	33.80
Primary Education	71	26.40
Junior High Education	107	39.80
Total	269	100

Source: Database of McCoy, Nusrat Jahan Ahmadiyya and Tumu Colleges of Education (2023)

Respondents According to Sex

The results in Table 6, show that a total of 269 respondents were part of the study. The data suggests that 136 males representing approximately 51%, slightly exceeding the 133 females, who made up 49%. This small difference of three reflects the distribution of second-year students by sex in the Upper West Region's Colleges of Education, where male-to-female ratio is nearly equal.

Respondents According to the Programme of Study

The results in Table 6, show that most of the students in the Upper West Region Colleges of Education enrolled to pursue Junior High Education, with 107 students (approximately 40%). This is followed by 91 students (34%) studying Early Grade and 71 students (26%) enrolled in Primary Education.

Analysis of the Main Data

Preliminary Analysis

The study tested nine hypotheses. Before the hypotheses were tested, the normality assumption of the data was tested for academic motivation, SRL, and academic engagement using the Shapiro-Wilk statistic, the Histogram, and the Q-Q plot. Normality was assumed if the Shapiro-Wilk statistic produce a p-value greater than .05. The Shapiro-Wilk statistic results are displayed in Table 7.

Table 7: *Tests of Normality*

	Shapiro-Wilk		
	Statistic	Df	Sig.
Academic Motivation	.991	269	.105
SRL	.990	269	.067
Academic Engagement	.992	269	.165

Source: Field survey (2023)

The data from Table 7 show that the distribution of scores is normally distributed for academic motivation, SRL, and academic engagement. For data to be normally distributed, the Shapiro-Wilk statistic sig. value should be greater than .05. From the Table 7, the sig. values for all the constructs are more than .05 indicating that normality is assumed.

Also, the Q-Q plots for normal for the three constructs were assumed. See Figure 5, Figure 6, and Figure 7 respectively.

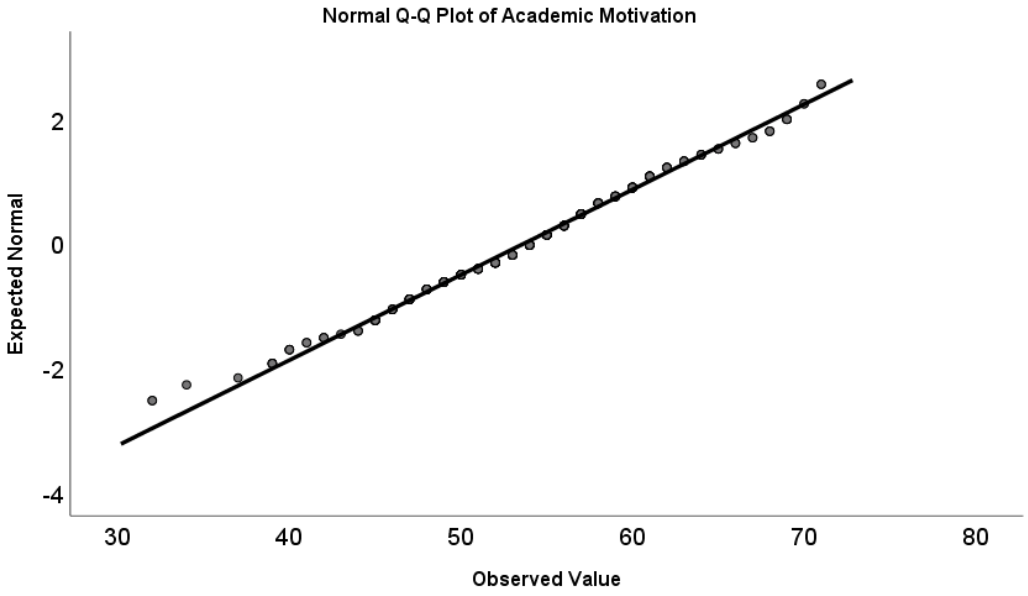

Figure 5: Normal Q-Q Plot of Academic Motivation

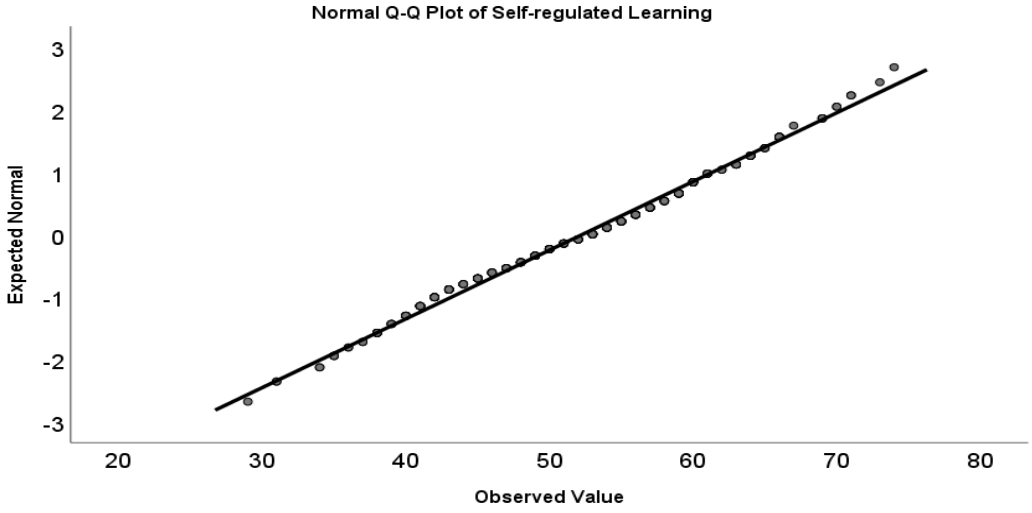

Figure 6: Normal Q-Q Plot of Self-regulated learning (SRL)

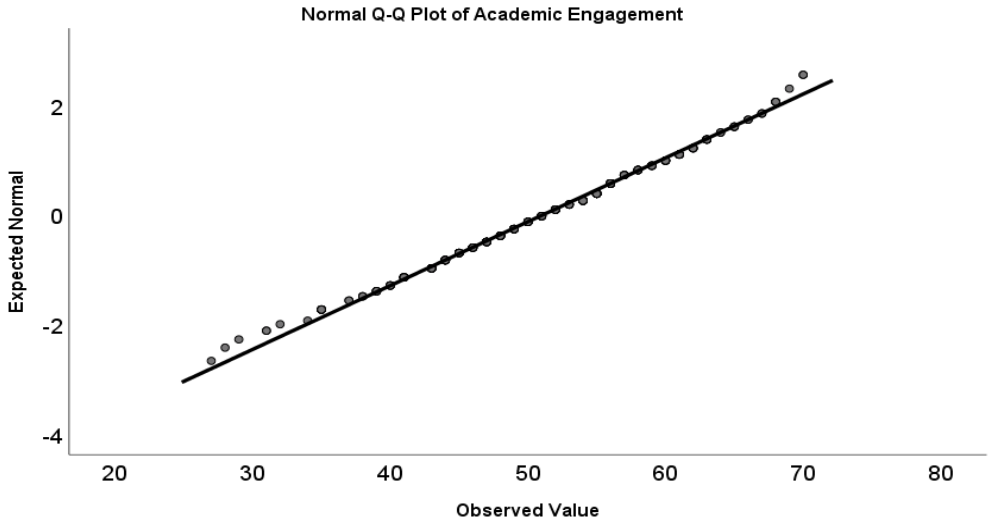

Figure 7: Normal Q-Q Plot of Academic Engagement

Figures 5, 6, and 7 show normally distributed data as the Q-Q plots for normality for academic motivation, SRL, and academic engagement scores were close to the straight line.

Also, the output from the histogram was examined to ensure normality assumption was met. The results showed normally distributed data for each construct as most of the scores occurred in the middle narrowing out towards the extreme ends of the Histogram (see Appendix E). Additionally, the linearity and homoscedasticity assumption for correlation was met as the P-P plot of the residuals were closer to the line (see Appendix G)

Hypothesis 1

H_0: *There is statistically no significant relationship between academic motivation and academic engagement of students in Colleges of Education*.

The statistical method used to test this hypothesis was the Pearson r. Table 8 depicts the results.

Table 8: *Correlation between Academic Motivation and Academic Engagement*

			Academic Engagement	
Variables	Mean	SD	Correlation (r)	Sig.
Academic Motivation	53.799	7.304	.273*	.000
Academic Engagement	51.212	8.589	1	

* significant at the 0.05 level (2-tailed). n=269 (Field survey, 2023)

The data from Table 8 show that a significant positive relationship exists between academic motivation and students' academic engagement in Colleges of Education in the Upper West Region ($r = .273$, $p < .001$). The data provides evidence to suggest that academic motivation and academic engagement are moderately related in the population under investigation. This implies that an increase in the academic motivation of a student will likely lead to an increase in the academic engagement of that student. On the basis of the results presented in Table 8, the null hypothesis, asserting no statistically significant relationship between academic motivation and academic engagement among students in Colleges of Education was rejected.

Hypothesis 2

H_0: There is statistically no significant relationship between Self-regulated Learning (SRL) and academic engagement of students in Colleges of Education.

The Pearson r was employed in testing this hypothesis. Table 9 depicts the results.

Table 9:*Correlation between SRL and Academic Engagement*

			Academic Engagement	
Variables	Mean	SD	Correlation (r)	Sig.
SRL	52.297	9.088	.088	.149
Academic Engagement	51.212	8.589	1	

Source: Field survey (2023)

Data from Table 9 show that the SRL and academic engagement of students in Colleges of Education in the Upper West Region do not significantly relate to each other as ($r = .088$, $p > .149$). The study did not find evidence to conclude that SRL and academic engagement are significantly related in the population under investigation. On the basis of the results provided in Table 9, the data did not offer enough evidence for the null hypothesis to be rejected, indicating that a statistically significant relationship does not exist between SRL and academic engagement of students in Colleges of Education.

Hypothesis 3

H_0: *There is statistically no significant relationship between academic motivation and self-regulated learning (SRL) of students in Colleges of Education.*

The Pearson r was employed in testing this hypothesis. Table 10 depicts the results.

Table 10: *Correlation between Academic Motivation and SRL*

			SRL	
Variables	Mean	SD	Correlation (r)	Sig.
Academic Motivation	53.799	7.304	.097	.112
SRL	52.297	9.088	1	

Source: Field survey (2023)

The data from Table 10 indicate no statistically significant correlation between academic motivation and SRL of students in the Upper West Region Colleges of Education ($r = .097$, $p > .112$). The study did not present compelling evidence to assert a significant association between SRL and academic engagement in the examined population. The data in Table 10 provides insufficient evidence to reject the null hypothesis, indicating no significant statistical association between academic motivation and SRL among students in Colleges of Education.

Hypothesis 4

H_0: *Programme of study will not predict the academic motivation of students in Colleges of Education.*

The hypothesis aimed to examine the connection between the programme of study (Early Grade, Primary Education, and Junior High Education) and academic motivation. To test this hypothesis, data on academic motivation and programme of study underwent multiple linear regression. The independent (predictor) variable was measured on nominal terms. Dummy variables (Early Grade, Primary Education, and Junior High Education) were established, with Junior High Education serving as the reference category. The

dependent (criterion) variable, academic motivation, was measured as a continuous variable.

Before performing the multiple linear regression analysis, the data underwent testing for multicollinearity and autocorrelation regarding academic motivation. The Durbin-Watson test indicated no autocorrelation for academic motivation (d=1.7), where the 'd' value falls within the range of greater than 1.5 but less than 2.5. The Variable Inflation Factor (VIF) test indicated the absence of multicollinearity as the values are less than 10. The multiple linear regression analysis results are shown in Table 11.

Table 11: *ANOVA for Programme of Study as Predictor of Academic Motivation*

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	101.823	2	50.912	.954	.387
	Residual	14197.337	266	53.373		
	Total	14299.160	268			

a. Dependent Variable: Academic Motivation

b. Predictors: (Constant), Primary Education, Early Grade

The data from Table 11, reveal that the regression equation did not yield statistical significance, F (2, 266) = .954, p= .387. Consequently, the study failed to reject the null hypothesis. The joint influence of Early grade and Primary education, in comparison to Junior high education, did not significantly predict academic motivation. These variables explained only 0.7% of the variance in academic motivation (R^2 =.007).

Also, Table 12 displays the test results for the beta coefficients concerning the predictor (Programme of study) and the criterion (academic motivation).

Table 12: *Prediction of Programme of Study on Academic Motivation*

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
(Constant)	54.318	.706		76.908	.000		
Early Grade	-.351	1.042	-.023	-.337	.737	.817	1.224
Primary Education	-1.515	1.118	-.092	-1.355	.177	.817	1.224

a. Dependent Variable: Academic Motivation

Data from Table 12 indicate no statistically significant difference in the academic motivation of students enrolled in Early Grade when compared with those enrolled in Junior High Education programmes. The statistical analysis showed that Early Grade does not predict academic motivation, with a coefficient of $\beta = -.02$, t -.34, $p = .737$. Moreover, the findings suggested that there is no significant prediction of academic motivation by Primary Education when compared to Junior High Education, as evidenced by the statistically not significant coefficient for Primary Education $\beta = -0.09$, $t = -1.36$, $p = 0.177$. Therefore, it can be inferred that students enrolled in Early Grade and Primary Education are not less academically motivated than those enrolled in Junior High Education.

Hypothesis 5

H_0: Programme of study will not predict the self-regulated learning (SRL) of students in Colleges of Education.

This hypothesis aimed to determine whether programme of study predicts the SRL of Colleges of Education students. This hypothesis was also tested using multiple linear regression analysis. The Durbin-Watson test revealed no autocorrelation for SRL (d=1.7), as the 'd' value is greater than 1.5 but less than 2.5. The Variable Inflation Factor (VIF) indicated the absence of multicollinearity as the values are less than 10. The results from the multiple linear regression analysis is depicted in Table 13.

Table 13: *ANOVA for Programme of Study as Predictor of SRL*

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	56.057	2	28.029	.338	.714
	Residual	22078.151	266	83.001		
	Total	22134.208	268			

a. Dependent Variable: Self-regulated Learning (SRL)

b. Predictors: (Constant), Primary Education, Early Grade

The data from Table 13 indicate that the regression equation lacked statistical significance, with F (2, 266) = .338, p = .714. Thus, the study failed to reject the null hypothesis. When Early Grade and Primary Education were combined and compared with Junior High Education, they did not significantly predict SRL. Their contribution explains only 0.3% of SRL (R^2 =.003). Also, Table 14 displays the test results for the beta coefficients concerning the predictor (Programme of study) and the criterion (SRL).

Table 14: *Prediction of Programme of Study on SRL*

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
(Constant)	52.607	.881		59.731	.000		
Early Grade	-.948	1.299	-.049	-.730	.466	.817	1.224
Primary Education	.040	1.395	.002	.029	.977	.817	1.224

a. Dependent Variable: SRL

Data from Table 14 indicate no statistically significant difference in the SRL of students who offered Early Grade when compared to those who offered Junior High Education programme. The statistical examination reveals that Early Grade does not serve as a predictor for SRL, as reflected by a coefficient of $\beta = -0.05$, $t = -0.73$, $p = .466$. Also, the findings indicated that there is no significant prediction of SRL by Primary Education when compared to Junior High Education $\beta = -.00$, $t = -.03$, $p = .977$. The non-significant coefficients suggest that being enrolled in Early Grade or Primary Education does not make students less self-regulated in their learning compared to those in Junior High Education.

Hypothesis 6

H_0: *Programme of study will not predict academic engagement of College of Education Students*

This hypothesis examined whether programme of study predicted student's academic engagement in Colleges of Education. Regression analysis

was employed in testing this hypothesis. The Durbin-Watson test revealed no autocorrelation for academic engagement (d=1.6), as the 'd' value is greater than 1.5 but less than 2.5. The Variable Inflation Factor (VIF) indicated the absence of multicollinearity as the values are less than 10. The results from the multiple linear regression is depicted in Table 15.

Table 15: *ANOVA for Programme of Study as a Predictor of Academic Engagement*

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	161.687	2	80.843	1.097	.335
	Residual	19607.235	266	73.711		
	Total	19768.922	268			

a. Dependent Variable: Academic Engagement

b. Predictors: (Constant), Primary Education, Early Grade

The data from Table 15 reveal that the regression equation lacked significance, as indicated by F (2, 266) = 1.097, p = .335. Therefore, the study failed to reject the null hypothesis. Combining Early Grade and Primary Education and contrasting them with Junior High Education did not yield a significant prediction of academic engagement. The combined contribution of Early Grade and Primary Education explained merely 0.8% of academic engagement, reflected by R^2 = .008.

Table 16 displays the test results for the beta coefficients concerning the predictor (Programme of study) and the criterion (Academic Engagement).

Table 16: *Prediction of Programme of Study on Academic Engagement*

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
(Constant)	50.421	.830		60.748	.000		
Early Grade	.821	1.224	.045	.671	.503	.817	1.224
Primary Education	1.946	1.314	.100	1.480	.140	.817	1.224

a. Dependent Variable: Academic Engagement

The data from Table 16 suggest no statistically significant difference in the academic engagement of students enrolled in the Early Grade programme when compared with those enrolled in the Junior High Education programme. The statistical analysis indicated that Early Grade does not act as a predictor for academic engagement, as evidenced by a coefficient of $\beta = .05$, $t = .67$, $p = .671$. Furthermore, the results suggest that the prediction of academic engagement by Primary Education in comparison to Junior High Education was not significant as $\beta = .10$, $t = -1.480$, $p = .140$. The absence of statistical significance in the coefficients implies that students enrolled in Early Grade or Primary Education are not less academically engaged than their counterparts in Junior High Education.

Hypothesis 7

Ho: There is statistically no significant difference between the academic motivation of male and female students in Colleges of Education.

This hypothesis examined whether male and female students in Colleges of Education significantly differ in terms of their academic motivation. An independent sample t-test was utilised to test the hypothesis.

Prior to testing the hypothesis, normality assumption, homogeneity of variance, independent variable with two categories and a dependent variable being interval or ratio variable which guides the conduct of an independent sample t-test were considered. The normality test conducted as indicated by the Shapiro-Wilk test showed a normal distribution of academic motivation scores for male and female students in Colleges of Education, with $p > .147$ for males and $p > .545$ for females. The Q-Q plot for normality also showed that the distribution did not deviate widely from the diagonal indicating a normal distribution of the scores (see Appendix F). Also, the test for homogeneity of variance as indicated by the Levene test for equality of variance revealed the assumption of homogeneity since $p > .185$. After satisfying the assumptions for the conduct of independent sample-test, the hypothesis was tested. The outcome of the analysis is presented in Table 17.

Table 17: *Descriptive Statistics for differences in means for Academic Motivation of male and female students in Colleges of Education*

Variables	Sex	N	Mean	Std. Deviation	Std. Error Mean	T	Df	Sig.
Academic Motivation	Male	136	54.073	7.825	.671	.622	267	.534
	Female	133	53.519	6.749	.585			

Source: Field survey (2023)

The data from Table 17 clearly show that a statistically significant difference did not exist in the scores for male (M = 54.07, SD = 7.82) and female (M = 53.52, SD = 6.75) students in Colleges of Education in terms of their academic motivation since t (267) = 0.62, p > .534. Therefore, the study failed to reject the null hypothesis.

From Table 17, it is apparent that among the sample respondents, male students exhibited a mean academic motivation score which is slightly greater than the mean of the female students. The minor mean difference is statistically not significant and it suggests that male and female students in Colleges of Education are motivated similarly in their academics.

Hypothesis 8

H_o: There is statistically no significant difference between the SRL of male and female students in Colleges of Education.

The hypothesis investigated whether male and female students in Colleges of Education significantly differ regarding their SRL. The Independent sample t-test was employed to test the hypothesis. The assessment of normality demonstrated a normal distribution, supported by the Shapiro-Wilk test's results indicating a normal distribution of SRL scores

among male students (p = .408 > .05) and female students (p = .093 > .05) (see Appendix F). Additionally, the Q-Q plot depicted in Appendix F illustrated that the distribution closely followed the diagonal line, providing additional confirmation of the normal distribution of the scores. Moreover, the examination for homogeneity of variance, as indicated by the Levene test for equality of variance, affirmed the assumption of equal variance, with a p =.204, exceeding the significance level of .05. The hypothesis was tested after having met the prerequisites for conducting an independent t-test. Table 18 depicts the results of the analysis.

Table 18: *Descriptive Statistics for differences in means for Self-regulated Learning (SRL) of male and female students in Colleges of Education*

Variables	Sex	N	Mean	Std. Deviation	Std. Error Mean	T	Df	Sig.
SRL	Male	136	52.941	8.695	.746	1.176	267	.241
	Female	133	51.639	9.461	.820			

Source: Field survey (2023)

The data from Table 18 indicate a statistically significant difference did not exist in the scores for male (M = 52.64, SD = 8.69) and female (M = 51.64, SD = 9.46) students enrolled in Colleges of Education concerning their SRL, with t (267) = 1.18, p > .24. Consequently, the null hypothesis was not rejected.

From Table 18, it is apparent that among the sampled respondents, male students exhibited a mean SRL score slightly greater than the mean of the female students. The marginal difference is however not statistically

significant and it suggests a comparable level of SRL between male and female students enrolled in Colleges of Education.

Hypothesis 9

H_o: There is statistically no significant difference between the academic engagement of male and female students in Colleges of Education.

The hypothesis investigated whether a notable difference exists between male and female students in Colleges of Education regarding their academic engagement. The independent sample t-test was conducted to test the hypothesis. A test of normality was conducted which revealed a normal distribution, as evidenced by the Shapiro-Wilk test results indicating a normal distribution of academic engagement scores among both male ($p = .408 > .05$) and female students ($p = .093 > .05$) (see Appendix F). Furthermore, the Q-Q plot depicted in Appendix F is closely aligned with the diagonal line, further verifying the normal distribution of the scores. However, the examination for homogeneity of variance showed an unequal assumption of variance as indicated in the Levene test with a p-value of .018 which is less than .05. The analysed result is depicted in Table 19.

Table 19: *Descriptive Statistics for differences in means for Academic Engagement of male and female students in Colleges of Education*

Variables	Sex	N	Mean	Std. Deviation	Std. Error Mean	T	Df	Sig.
Academic Engagement	Male	136	50.757	9.252	.793	-.879	261.914	.380
	Female	133	51.677	7.861	.682			

Source: Field survey (2023)

The data in Table 19 show that no statistically significant difference was found in the scores between male (M = 50.76, SD = 9.25) and female (M = 51.68, SD = 7.86) students enrolled in Colleges of Education regarding their academic engagement, with t(261.91) = -.88, p > .380, when assuming unequal variance. Therefore, the null hypothesis was not rejected.

It is, evident in Table 19 that within the sampled participants, male students demonstrated a mean academic engagement score slightly lower than the mean score of the female students. The minor difference is statistically not significant and it suggests that male and female students enrolled in Colleges of Education exhibit a comparable level of academic engagement.

Discussion of Results

Relationship between Academic Motivation and Academic Engagement

The discussion of the results aligns with the study's research hypotheses. The first hypothesis determined whether a significant relationship exists between academic motivation and academic engagement of students in Colleges of Education. The findings for this research hypothesis revealed that Upper West Region's Colleges of Education students have their academic motivation positively related to their academic engagement. This means that when a student is academically motivated, the student is likely to be engaged in his or her academics. The finding supports Jeffries's (2018) results from a study with a sample of 78 freshman university students in a Psychology course, that students' choice of course and satisfaction with the course and for that matter their engagement with the course correlated to their academic motivation. Similarly, the results align with the outcomes of Dogan's (2015) study, which delved into the predictive factors of academic performance,

specifically investigating the roles of student engagement, academic self-efficacy, and academic motivation. It was revealed that students' engagement correlated with their academic motivation. The study results also back that of Li et al. (2016) on the association between academic motivation and engagement of college students in an English Language course in China. The MUSIC model of academic motivation inventory and engagement scale were employed for data collection where it was revealed that elements of the MUSIC model correlated positively and significantly to student engagement.

The positive relationship in the result could be attributed to the desire of students to succeed in their education as their success will mean gaining employment soon after completion of college compared to their counterparts in other tertiary institutions that also train teachers for the basic level of Ghana's education. Students' academic success may be attributed to their motivation and engagement in their studies. If there is a positive association between academic motivation and engagement, it means that academically motivated students will possibly be actively involved in their studies. To enhance student success in school, it is essential to create conditions that foster academic motivation, as this, in turn, promotes active academic engagement. A positive relationship between academic motivation and engagement means that a student who is motivated academically will likely engage more in their studies. Therefore, conditions that foster academic motivation must be put in place to inspire students to increase their engagement in studies, ultimately enhancing their success in school.

Relationship between Self-Regulated Learning and Academic Engagement

The second research hypothesis examined the relationship between Self-regulated Learning (SRL) and academic engagement of students in Colleges of Education. The result revealed that the SRL of Colleges of Education students in the Upper West Region does not relate to their academic engagement. This means that when students self-regulate their learning, it does not make them get engaged with their academics. Similarly, being involved with their academics does not necessarily mean that students will develop the ability to self-regulate their learning. The results however contradicted the findings of earlier researchers (Estévez et al., 2021; Setiani & Wijaya, 2020) on studies they carried out on the association between SRL and academic engagement using a convenient sample. They uncovered a positive and significant relationship between SRL and student academic engagement. The contradiction may have arisen from the sampling technique used. These earlier researchers used a convenient sample which might not have represented the entire population of study but the present study used a probability sample for the study.

Also, the results did not support the study carried out by LeMay (2017) on academic engagement, motivation, SRL, and academic achievement using a sample of 460 Sophomore Students. The study uncovered a positive correlation between academic engagement and SRL. The study was carried out at Georgia Southern University which may have a learning environment and conditions different from the current study.

The result of the study not supporting other earlier studies conducted outside of the current setting may be attributed to a number of reasons. Cultural differences and socioeconomic factors may have influenced the way College students in the Upper West Region approach learning and engagement. Cultures that emphasize group learning and collaboration may impact the significance of individual SRL strategies. Additionally, most students are from lower socioeconomic backgrounds and may face challenges that affect their ability to engage academically, regardless of their SRL skills. Furthermore, the variations in educational systems, curriculum structures, and teaching methods may also account for the differences in the results.

Relationship between Academic Motivation and Self-Regulated Learning

The third hypothesis examined the relationship between academic motivation and SRL of students in Colleges of Education. The result yielded no statistically significant relationship between academic motivation and SRL. The result is in line with the findings of Manguiat et al. (2022) who explored whether academic motivation and SRL of first-year students can predict their academic achievement. The research revealed no statistically significant association between academic motivation and SRL. Additionally, the study's results align with those of Kim et al. (2015) who looked at whether students' motivation and SRL can change over time in medical students. The study found that, as students progress from their first to their second year and become more motivated, they tend to use fewer self-regulated strategies over time. The learning environment, instructional approaches, and institutional elements can impact the connection between academic motivation and SRL. It is possible that students in Colleges of Education in the Upper West Region

may not have a strong connection between their academic motivation and SRL due to some of the above reasons. If conditions are not conducive to cultivating self-regulatory skills or academic motivation, then the relationship between these two constructs may not be strong.

The result, however, contrasts the findings of some earlier studies such as Cetin (2015), Mahmoodi et al. (2014), Mustapha et al. (2023) and Soufi et al. (2013). These studies' findings showed a statistically significant association between academic motivation and SRL which contrasts the study's findings. It is possible that the variations in the findings could be due to individual differences in students, such as their cognitive abilities, learning styles, and personality traits. These factors can affect the relationship between academic motivation and SRL, leading to differences in academic outcomes. For instance, some students may have high motivation but struggle with self-regulation, while others may do well in both areas.

Programme of Study and Academic Motivation

The fourth hypothesis was tested to determine whether students' programme of study would predict their academic motivation. The result revealed a lack of significant predictive outcomes concerning students' academic motivation based on their programme of study. The finding suggests that a chosen programme of study does not serve as a predictor for the academic motivation of students within Ghana's Upper West Region Colleges of Education. The result contradicts the findings of a study by Hu et al. (2022) on academic motivation among senior students taking rehabilitation related profession as a major in China. The research findings indicated that students enrolled in a specialized curriculum exhibited increased motivational levels

compared to their peers in general curriculum programmes suggesting, that specialized programmes may serve as better predictors of academic motivation than general curriculum programmes. The variation in the results could potentially be ascribed to the study's utilisation of a sample size which is quite small and might not adequately represent the entire population. Also, the result failed to support the study by Maurer et al. (2013), which focused on comparing student academic motivation across three-course disciplines. The findings showed a statistically significant difference between academic motivation and student's programme of study, suggesting that the programme of study is a predictor of academic motivation. However, the present study did not identify programme of study as a significant predictor of academic motivation. This may be attributed to differences in content and structure of the programmes that were studied since the studies involved different programmes.

Programme of Study and Self-Regulated Learning

The fifth hypothesis was tested to examine whether students' programme of study would predict their SRL. The study revealed that the programme of study does not serve as a predictor of SRL. The finding aligns with the result of Bene et al. (2021) who compared self-regulation levels and academic performance among university students majoring in Business Administration, Engineering, Law, and Computer Science using a sample of 150. It was discovered that the Difficult Times scale of SRL did not significantly differ in Computer Science. Also, the Positive Action scale of SRL among all majors analysed did not differ significantly. The data on programme of study of students within the Upper West Region's Colleges of

Education was unable to predict their SRL. This could be because the teaching methods used in the different programmes are consistent, resulting in less variation in the development of SRL. Also, it is possible that the programmes have similar or overlapping curricula which may not provide unique chances for students to grow distinct SRL. A lack of diversity in course content and structure could play a role in the absence of statistically significant prediction observed in the results.

However, the study's outcome diverged from Arcoverde et al. (2022) research on SRL of Natural Sciences and Mathematics future teachers' learning strategies, self-efficacy, and socio-demographic factors in Piau, Brazil. The results revealed a difference across licentiate areas in how students use SRL strategies which contrasts the results of this study.

Programme of Study and Academic Engagement

The sixth hypothesis was tested to examine whether students' programme of study would predict their academic engagement. It was observed that programme of study of Colleges of Education students in the Upper West Region did not predict their academic engagement. The results corroborated Simpson (2014) findings on the effects of student engagement on retention when male undergraduate STEM majors and non-STEM majors were compared. It was revealed that STEM and non-STEM majors for student engagement do not differ significantly. This implies that STEM and non-STEM programmes did not predict student engagement. Also, Panwar (2018) did not find a significant difference in American freshmen and senior, and international non-STEM students' engagement. The programmes in this study did not serve as predictors of academic engagement for students enrolled in

Colleges of Education in the Upper West Region. The study suggests that the engagement level of students for each of the programmes is similar. This may be explained by the possibility that students enrolled on different programmes might have similar characteristics and programme-specific factors may have less impact on their academic engagement. Also, when programmes have similar academic cultures and organisational structures, it may contribute to a lack of variation in academic engagement.

The result of the hypothesis on programme of study and academic engagement however debunks the findings of Sukor et al. (2021) on the correlation between students' engagement and academic performance among non-food science students taking a food science course. A difference in the mean score for student engagement was found in the study. The difference in the mean score was due to the differences in their programme of study. Additionally, Panwar (2018) found that American STEM students were more engaged as compared to international STEM students. Their findings diverged from this study's results where programme of study does not show a statistically significant prediction of academic engagement. The divergence of these findings with this study's result may be attributable to the demographic composition of students within programmes. Different demographic groups may have varying preferences and needs for engagement.

Sex and Academic Motivation

The study aimed to determine whether there is a difference in academic motivation between male and female students in Colleges of Education. It was uncovered that no statistically significant difference exists between male and female students in Colleges of Education regarding their

academic motivation. This outcome aligns with Sadd et al. (2011) who similarly identified academic motivation among science students not to be significantly different in terms of sex. The findings also corresponded with those of Sivrikaya (2019), as no distinction in academic motivation between genders was observed. Furthermore, the results supported Schultz-Leon's (2013) research on gender and family factors, which found gender not to be a significant predictor of academic motivation. In this study, sex did not emerge as a determining factor in learners' academic motivation in Colleges of Education in the Upper West Region. When societal expectations and educational policies change as in the case of Ghana, it can affect how people view and approach academic tasks, regardless of sex.

However, the finding contradicts that of Hakan et al. (2014), who identified significant gender-based differences in academic motivation. Similarly, Dramanu and Mohammed (2017) noted distinctions in male and female student motivation, and Tudor et al. (2019) identified academic motivation to be predicted by gender in a sample study. The difference in gender regarding interests and preferences for specific subjects or fields may contribute to variations in academic motivation.

Sex and Self-Regulated Learning

The hypothesis on sex and SRL was tested to determine whether male and female students in Colleges of Education differ in their SRL. The study found no statistically significant sex difference in SRL when females were compared with males. The result echoes the findings of Adam et al. (2022), who, in their research involving 209 graduate students, discovered no significant difference in self-regulated behaviours between genders. Also,

Nikoopour et al. (2021) examined the learning styles and self-regulated behaviours of EFL learners, considering the influence of gender and proficiency level, and similarly found that gender was not a determinant of SRL. Additionally, Yukselturk et al. (2009) uncovered that male and female students did not statistically significantly differ in their means in terms of motivational beliefs, SRL, and programming achievement. The lack of statistical significance revealed in the study may be a result of the instructional support college students in Ghana's Upper West Region received which affected the development of self-regulated learning skills. If instructional support is equitable across sexes, it may result in statistically insignificant findings.

However, the result contrasts Velavutham et al. (2012), who identified a significant gender difference in task value concerning SRL. Their hierarchical linear regression analysis revealed gender as a predictor of students' self-regulated online learning. Also, Barta et al. (2021) found gender as a significant predictor of students' online SRL. The variations in the findings could stem from variances in in other factors, such as ethnicity, socioeconomic status, or cultural background which may affect how students self-regulate their learning.

Sex and Academic Engagement

The ninth hypothesis tested gender and academic engagement to determine whether male and female students differ. The test revealed the absence of a statistically significant difference in academic engagement of male and female students in Colleges of Education. The study's result affirmed those of Hofer et al. (2022) on what matters for boys does not

necessarily matter for girls: gender-specific relations between perceived self-determination, engagement, and performance in school mathematics. They found no sex-based differences in the prediction of behavioural and cognitive engagement. Additionally, the results aligned with Ganiyu's (2021) research, which found that gender had no influence on science students' engagement levels during Emergency Remote Teaching in Colleges of Education amidst the COVID-19 pandemic lockdown. This implies that the levels academic engagement of students in the Upper West Region's Colleges of Education showed no significant sex disparities, possibly due to their similar cultural backgrounds and educational environments.

However, the study's outcome diverged from Hartoon et al.'s (2019) research on gender and grade-based disparities in academic engagement in high school students in Jember Regency, Indonesia. Unlike their findings, which highlighted a statistically significant difference in gender regarding academic engagement, this study did not find such a distinction. Moreover, Korlat et al. (2021) noted a significant sex difference in learning engagement, with girls exhibiting higher scores than boys, contrasting with the present study's results. The disparities between the outcomes of these investigations and the present study may stem from the use of senior high school students as participants in those investigations. The unique developmental stages of students in high school differ from those of this current study's participants, potentially explaining the observed differences in the result.

Summary of the Chapter

The study found a significant relationship between academic motivation and academic engagement among students in Colleges of

Education in the Upper West Region. However, no significant relationship was found between academic motivation and SRL. Additionally, the study revealed that SRL among students in the three Colleges of Education in the Upper West Region did not correlate with their academic engagement. Further analysis indicated that the three programmes of study did not serve as predictors for students' academic motivation, SRL, and academic engagement respectively. Furthermore, there was no statistically significant difference between male and female students in Colleges of Education in the Upper West Region in terms of their academic motivation, SRL and academic engagement respectively among the sampled population. Figure 8 presents the observed model based on the results of the study.

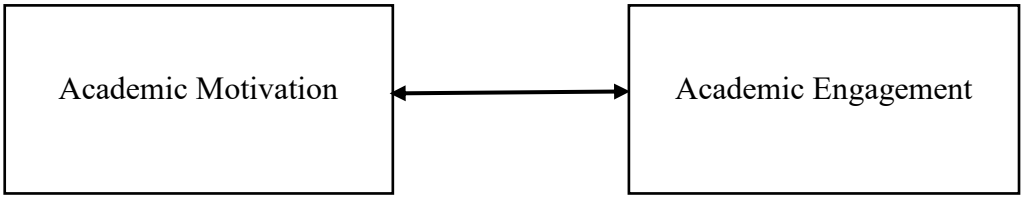

Figure 8: Observe Model

The proposed model illustrated in Figure 1 was not validated by the study's results. The observed model in Figure 8 showed that only academic motivation was related to academic engagement. However, self-regulated learning as depicted in Figure 1 was not correlated to academic engagement nor was it correlated to academic motivation. Also, programme of study as depicted in Figure 1 did not serve as a predictor of academic motivation, self-regulated learning and academic engagement respectively. Similarly, students showed no variations in terms of sex on the main variables.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The chapter provides an overview of the research, conclusions, recommendations, and suggestions for future studies in light of the study's results.

Summary

Overview of the Study

The study investigated the relationship between academic motivation, SRL, and academic engagement of College of Education students in the Upper West Region. The research was structured around five objectives, which were translated into nine hypotheses. The research adopted the quantitative approach using a correlational design to carry out the study. The study involved 274 second-year students from the Upper West Region's Colleges of Education. A multi-stage sampling procedure was used to select the participants. Out of the 274 students, only 5 did not fill out and return the questionnaires, resulting in a high response rate of 98%. Therefore, the analysis was performed using the responses of 269 participants.

The research adapted the Academic Motivation scale developed by Vallerand et al. (1992), the Taiwanese Short Self-Regulation Questionnaire validated by Chen et al. (2018), and the University Student Engagement Inventory by Assuncao (2020). These adapted scales underwent validation through confirmatory factor analysis (CFA) utilising IBM SPSS+Amos software. The aforementioned scales exhibited favourable indicators of internal consistency, with α values of .7 and above. The collected data

underwent analysis through Pearson r, multiple linear regression, and independent t-test.

Key Findings

The study unveiled the following findings.

1. Academic motivation was significantly and moderately related to academic engagement.
2. There was no significant relationship between self-regulated learning and academic engagement.
3. There was no significant relationship between academic motivation and self-regulated learning.
4. Programme of study did not significantly predict academic motivation.
5. Programme of study did not significantly predict self-regulated learning.
6. Programme of study did not significantly predict academic engagement.
7. There was no statistically significant difference between the academic motivation of male and female students in Colleges of Education.
8. There was no statistically significant difference between the self-regulated learning of male and female students in Colleges of Education.
9. There was no statistically significant difference between the academic engagement of male and female students in Colleges of Education.

Conclusions

Based on the key findings, it can be concluded that a positive relationship exists between students' academic motivation in Upper West

Region Colleges of Education and their academic engagement. This implies that when students are academically motivated, they also actively engage with their studies. This is likely due to their desire to secure employment in the educational sector after successfully completing school, as the government of Ghana tends to employ those who excel in their academics. However, the self-regulated learning that students employ in their learning was not related to their academic engagement or academic motivation. Therefore, any intervention aimed at boosting the academic progress of College students in the Upper West Region, their academic motivation and academic engagement should be taken into account.

Also, programme of study did not predict the academic motivation, SRL, and academic engagement of students in Colleges of Education in the Upper West Region. Regardless of the specific programme in which a student is enrolled, there is no variation in academic motivation, SRL, and academic engagement among students. Conclusion can be drawn to the effect that when designing intervention programs to enhance these areas, a more inclusive and universal approach should be adopted instead of narrowing down to only programme of study.

Again, the study found that male and female students in Colleges of Education in the Upper West Region do not differ in their academic motivation, SRL, and academic engagement. Whether students in Colleges of Education are motivated academically, self-regulate their learning and engage in their academics or not, does not depend on their sex. Instead, students of both sexes exhibit similar levels of academic motivation, SRL, and academic engagement. This is likely because most of these students attended senior high

schools in their localities with similar cultural characteristics that influenced their lives. Thus, conclusion can be drawn that intervention schemes targeted at enhancing the academic motivation, SRL and academic engagement should be designed to benefit all students equally regardless of sex.

Recommendations

Taking the results as well as the conclusions drawn into consideration, the under-listed recommendations were made:

1. Principals and tutors within Colleges of Education in the Upper West Region should aim at creating a conducive learning environment and employ effective instructional approaches that enhance the cultivation of academic motivation, self-regulated learning, and academic engagement for students. This is crucial because unfavourable conditions may hinder the cultivation of self-regulatory skills, academic motivation, and academic engagement, potentially impacting the interplay of these essential elements.
2. Tutors, parents, and NGOs operating in the region should avoid focusing on sex or the specific programme of study that students are enrolled in. Neither sex nor programme of study determines students' academic motivation, SRL, and academic engagement. All students, regardless of their sex or programme of study, should receive equal attention and treatment. No programme should be considered more important than another.
3. Regional Education Directorate should collaborate with colleges to come out with context-base strategies that attend to the peculiar needs of students in the Upper West Region.

4. The National Council for Curriculum and Assessment (NaCCA) should prioritize academic motivation, self-regulated learning, and academic engagement by integrating them into the curriculum for all programmes of study, with equal attention given to both sexes.

Suggestions for future studies

The following are some suggestions made for further studies:

1. Similar studies should be carried out to examine the academic motivation, SRL and academic engagement of Senior High School students.
2. Future study is needed to investigate the academic motivation, SRL, and academic engagement of tutors in Colleges of Education. Understanding these variables in tutors is crucial, since it will reveal whether they are equipped to instil these qualities in the students they train.
3. There is also the need to replicate the study in other Colleges of Education across different regions in Ghana since cultural distinctions and internal policies may vary in these geographical areas, potentially producing diverse outcomes. This approach would contribute to a more extensive and thorough comprehension of the phenomena.

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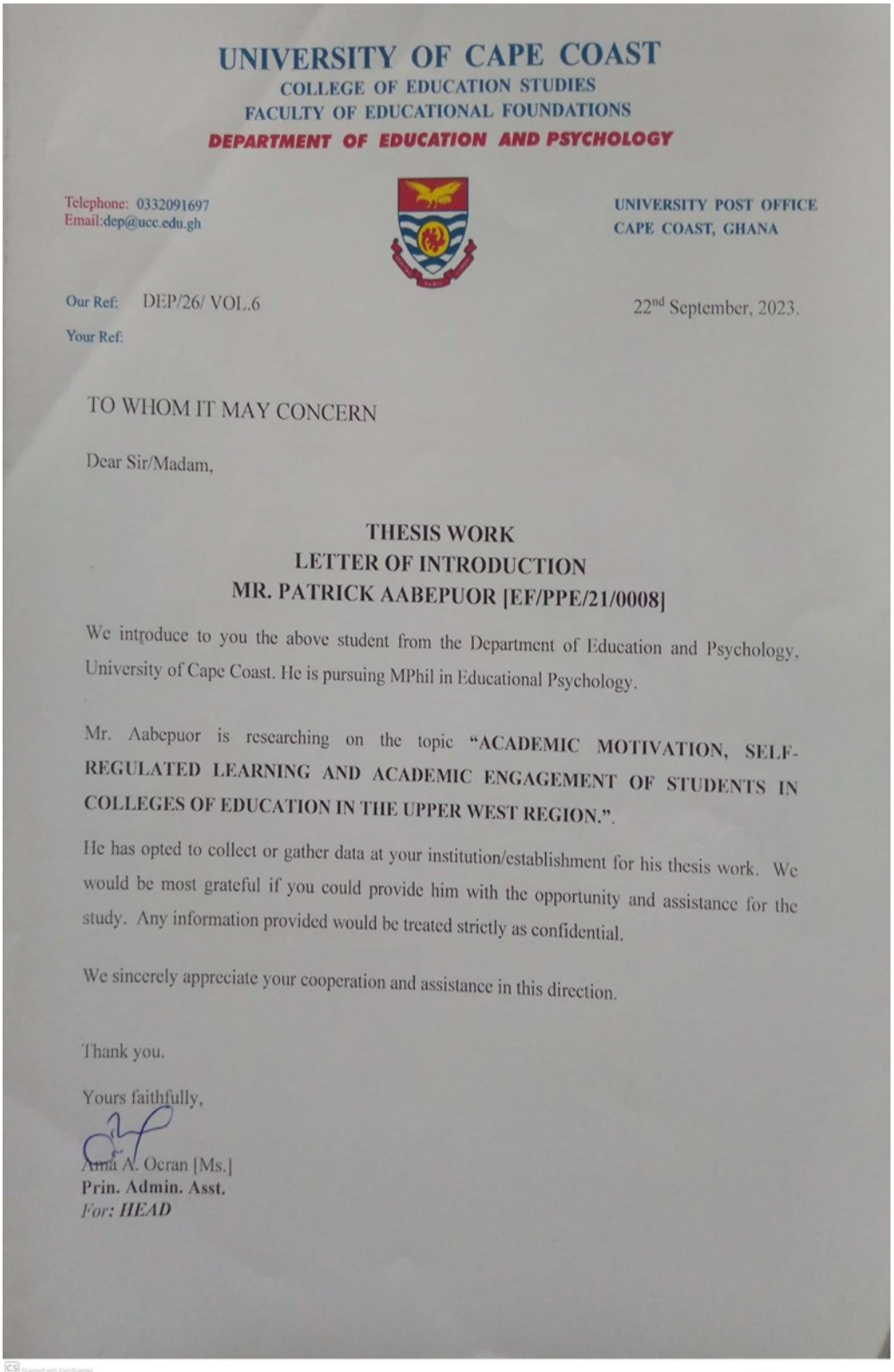
APPENDICES

APPENDIX A

INTRODUCTORY LETTER



UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF EDUCATIONAL FOUNDATIONS
DEPARTMENT OF EDUCATION AND PSYCHOLOGY

Telephone: 0332091697
Email:dep@ucc.edu.gh

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: DEP/26/ VOL.6
Your Ref:

22nd September, 2023.

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

THESIS WORK
LETTER OF INTRODUCTION
MR. PATRICK AABEPUOR [EF/PPE/21/0008]

We introduce to you the above student from the Department of Education and Psychology, University of Cape Coast. He is pursuing MPhil in Educational Psychology.

Mr. Aabepuor is researching on the topic **"ACADEMIC MOTIVATION, SELF-REGULATED LEARNING AND ACADEMIC ENGAGEMENT OF STUDENTS IN COLLEGES OF EDUCATION IN THE UPPER WEST REGION."**.

He has opted to collect or gather data at your institution/establishment for his thesis work. We would be most grateful if you could provide him with the opportunity and assistance for the study. Any information provided would be treated strictly as confidential.

We sincerely appreciate your cooperation and assistance in this direction.

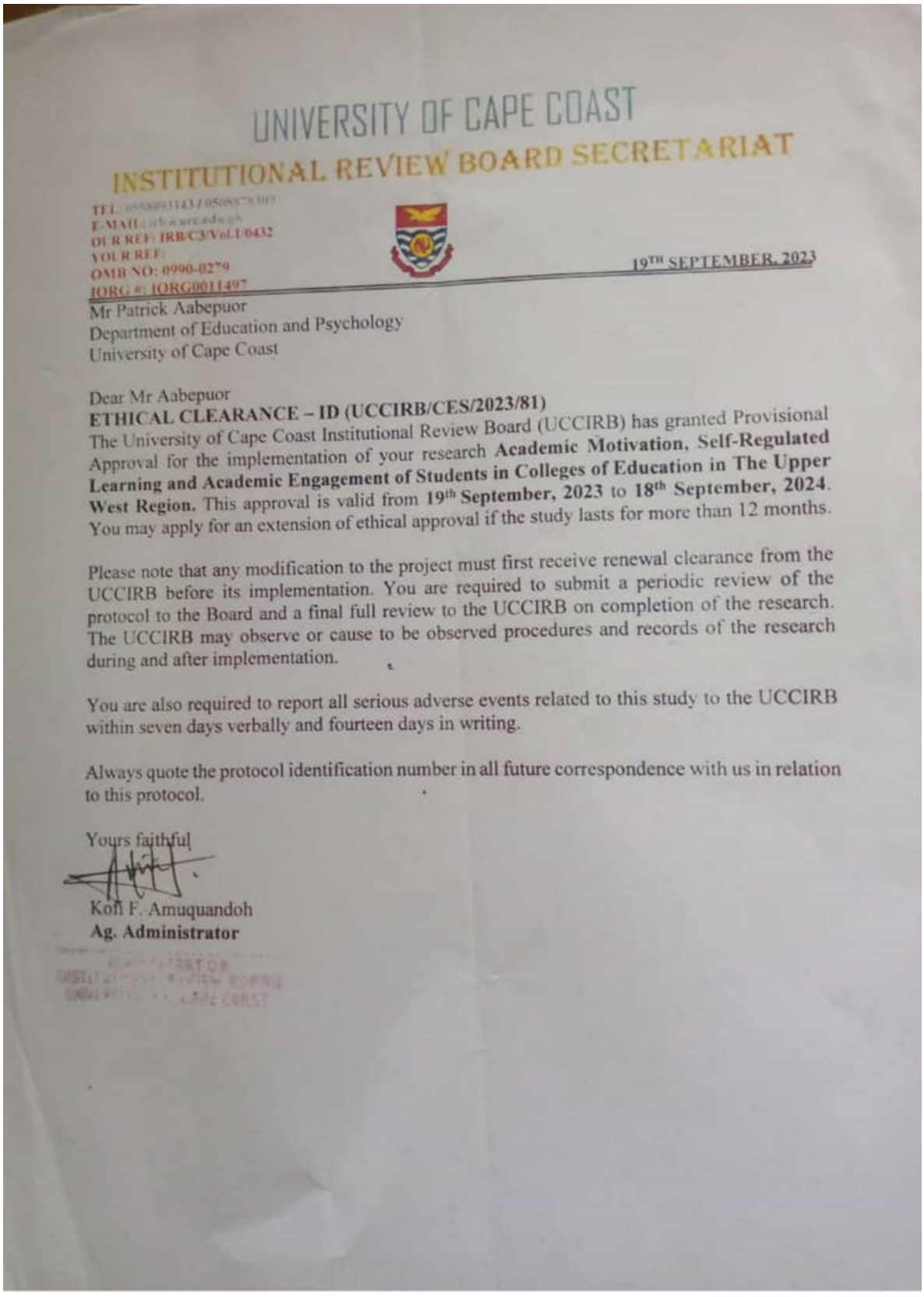
Thank you.

Yours faithfully,

Anna A. Ocran [Ms.]
Prin. Admin. Asst.
For: HEAD

APPENDIX B

ETHICAL CLEARANCE



UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: [illegible]
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OUR REF: IRB/C3/Vol.1/0432
YOUR REF:
OMB NO: 0990-0279
IORG #: IORG0011497

19TH SEPTEMBER, 2023

Mr Patrick Aabepuor
Department of Education and Psychology
University of Cape Coast

Dear Mr Aabepuor

ETHICAL CLEARANCE – ID (UCCIRB/CES/2023/81)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted Provisional Approval for the implementation of your research **Academic Motivation, Self-Regulated Learning and Academic Engagement of Students in Colleges of Education in The Upper West Region.** This approval is valid from **19th September, 2023** to **18th September, 2024**. You may apply for an extension of ethical approval if the study lasts for more than 12 months.

Please note that any modification to the project must first receive renewal clearance from the UCCIRB before its implementation. You are required to submit a periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithful

Kofi F. Amuquandoh
Ag. Administrator

APPENDIX C

QUESTIONNAIRE FOR TEACHER-TRAINEE

Questionnaire Before Pilot

UNIVERSITY OF CAPE COAST

Questionnaire for Teacher-Trainee

This questionnaire seeks information on your learning experiences as a student in the College of Education. All information provided in this questionnaire will be dealt with as a group and you will not be personally associated with it. Information will be kept anonymous and confidential. Please be frank and honest with your responses. All information provided is purely for research purposes.

PART A:

Background Information

This part collects data on the demographics of the respondent

INSTRUCTION

Kindly tick (√) the appropriate response that is applicable to you.

1. Gender: Male [ ] Female [ ]
2. Programme of Study: Early grade [ ] Primary Education [ ] Junior High Education [ ]

PART B

STUDENTS' ACADEMIC MOTIVATION

The following statements ask about your desire and effort in your academic study and success. Read carefully and indicate the extent to which you agree or disagree with the statements as they apply to you, using the below scale:

SD-Strongly Disagree, D-Disagree, A-Agree, SA-Strongly Agree

S/N	STATEMENTS	SD	D	A	SA
3.	I experience pleasure and satisfaction while learning new things.				
4.	I think that a college of education will help me have a profession				
5.	I experience pleasure while bettering myself in my studies.				
6.	I want to prove to myself that I am capable of completing my college degree				
7.	I experience pleasure when I discover new things never seen or heard before				

8.	A college degree will enable me to enter into the job that I like.				
9.	I experience pleasure when I read interesting books.				
10.	I experience pleasure while I am bettering myself in one of my personal accomplishments.				
11.	When I succeed in college, I will feel important.				
12.	I experience pleasure in broadening my knowledge in courses that I study				
13.	A college education will help me make a better choice regarding my career orientation.				
14.	I experience pleasure when I feel completely absorbed in what I study.				
15.	I feel satisfied when I am in the process of accomplishing difficult academic activities.				
16.	I want to show myself that I am an intelligent person.				
17.	My studies allow me to continue to learn about many things that interest me				
18.	I believe that a few additional years of education will improve my competence and knowledge.				
19.	College allows me to experience personal satisfaction in my quest for excellence in my studies.				
20.	I want to show myself that I can succeed in my studies.				

PART C

STUDENT SELF-REGULATED LEARNING

The statements below ask about the learning strategies you use in your studies. Read each statement carefully and indicate the extent to which agree or disagree with each of them as they apply to you as honestly as you can. Use the following scale: **SA- Strongly Agree, A - Agree, D - Disagree, SD- Strongly Disagree.**

S/N	STATEMENTS	SA	A	D	SD
21.	When I am trying to change something, I pay attention to how I am doing				

22.	I set goals for myself and keep track of my progress				
23.	Once I have a goal, I can usually plan how to reach it.				
24.	I am able to accomplish the goals I set for myself				
25.	If I make a resolution to change something, I pay a lot of attention to how I am doing				
26.	I usually keep track of my progress toward my goals				
27.	I have personal standards and try to live up to them				
28.	I get easily distracted from my plans.				
29.	I have trouble following through with things once I have made up my mind to do something.				
30.	I give up quickly				
31.	I put off making decisions				
32.	I don't notice the effects of my actions until it's too late				
33.	Most of the time I do not pay attention to what I am doing				
34.	I have trouble making up, my mind about things				
35.	I do not seem to learn from my mistakes				
36.	I learn from my mistakes				
37.	As soon as I see a problem or challenge, I start looking for possible solutions				
38.	I can stick to a plan that is working well.				
39.	I can usually find several different possibilities when I want to change something				
40.	I have trouble making plans to help me reach goals				
41.	I usually only have to make a mistake one time in order to learn from it.				
42.	I have a hard time setting goals for myself				

PART D

STUDENTS ACADEMIC ENGAGEMENT

The statement below asks about the effort you put into your academic activities. Please carefully read the statements below and indicate the degree to which they apply to you, using the following scale:

N-Never FT-A few times ST- Sometimes MT- Most of the time A- Always

S/N	STATEMENTS	N	FT	ST	MT	A
43.	I pay attention in class.					
44.	I follow the school's rules.					
45.	I usually do my assignment on time.					
46.	When I have doubts, I ask questions and participate in debates in the classroom.					
47.	I usually participate actively in group work.					
48.	I feel excited about the work at my college.					
49.	I like being at my college.					
50.	I am interested in my college work.					
51.	I do not feel very accomplished at this college.					
52.	My lecture room is an interesting place to be.					
53.	When I read a book, I question myself to make sure I understand the subject I am reading about.					
54.	I talk to people outside the school on matters that I learn in the lecture room.					
55.	If I do not understand the meaning of a word, I consult the dictionary or ask someone else.					
56.	I try to integrate the knowledge I acquire in solving new problems.					
57.	I try to integrate subjects from different programmes into my general knowledge.					

Student Questionnaire After Pilot

UNIVERSITY OF CAPE COAST

Questionnaire for Teacher-Trainee

This questionnaire seeks information on your learning experiences as a student in the College of Education. All information provided in this questionnaire will be dealt with as a group and you will not be personally associated with it. Information will be kept anonymous and confidential. Please be frank and honest with your responses. All information provided is purely for research purposes.

PART A:

Background Information

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INSTRUCTION

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PART B

STUDENTS' ACADEMIC MOTIVATION

The following statements ask about your desire and effort in your academic study and success. Read carefully and indicate the extent to which you agree or disagree with the statements as they apply to you, using the below scale:

SD-Strongly Disagree, D-Disagree, A-Agree, SA-Strongly Agree

S/N	STATEMENTS	SD	D	A	SA
3.	I experience pleasure and satisfaction while learning new things.				
4.	I think that a college of education will help me have a profession				
5.	I experience pleasure while bettering myself in my studies.				
6.	I want to prove to myself that I am capable of completing my college degree				
7.	I experience pleasure when I discover new things never seen or heard before				

8.	A college degree will enable me to enter into the job that I like.				
9.	I experience pleasure when I read interesting books.				
10.	I experience pleasure while I am bettering myself in one of my personal accomplishments.				
11.	When I succeed in college, I will feel important.				
12.	I experience pleasure in broadening my knowledge in courses that I study				
13.	A college education will help me make a better choice regarding my career orientation.				
14.	I experience pleasure when I feel completely absorbed in what I study.				
15.	I feel satisfied when I am in the process of accomplishing difficult academic activities.				
16.	I want to show myself that I am an intelligent person.				
17.	My studies allow me to continue to learn about many things that interest me				
18.	I believe that a few additional years of education will improve my competence and knowledge.				
19.	College allows me to experience personal satisfaction in my quest for excellence in my studies.				
20.	I want to show myself that I can succeed in my studies.				

PART C

STUDENT SELF-REGULATED LEARNING

The statements below ask about the learning strategies you use in your studies. Read each statement carefully and indicate the extent to which agree or disagree with each of them as they apply to you as honestly as you can. Use the following scale: **SA- Strongly Agree, A - Agree, D - Disagree, SD- Strongly Disagree.**

S/N	STATEMENTS	SA	A	D	SD
21.	I set goals for myself and keep track of my progress				
22.	Once I have a goal, I can usually plan how to reach it.				
23.	I am able to accomplish the goals I set for myself				
24.	If I make a resolution to change something, I pay a lot of attention to how I am doing				
25.	I usually keep track of my progress toward my goals				
26.	I have personal standards and try to live up to them				
27.	I get easily distracted from my plans.				
28.	I have trouble following through with things once I have made up my mind to do something.				
29.	I give up quickly				
30.	I don't notice the effects of my actions until it's too late				
31.	Most of the time I do not pay attention to what I am doing				
32.	I have trouble making up, my mind about things				
33.	I do not seem to learn from my mistakes				
34.	I learn from my mistakes				
35.	As soon as I see a problem or challenge, I start looking for possible solutions				
36.	I can stick to a plan that is working well.				
37.	I can usually find several different possibilities when I want to change something				
38.	I have trouble making plans to help me reach goals				
39.	I have a hard time setting goals for myself				

PART D

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The statement below asks about the effort you put into your academic activities. Please carefully read the statements below and indicate the degree to which they apply to you, using the following scale:

N-Never FT-A few times ST- Sometimes MT- Most of the time A- Always

S/N	STATEMENTS	N	FT	ST	MT	A
40.	I pay attention in class.					
41.	I follow the school's rules.					
42.	I usually do my assignment on time.					
43.	When I have doubts, I ask questions and participate in debates in the classroom.					
44.	I usually participate actively in group work.					
45.	I feel excited about the work at my college.					
46.	I like being at my college.					
47.	I am interested in my college work.					
48.	My lecture room is an interesting place to be.					
49.	When I read a book, I question myself to make sure I understand the subject I am reading about.					
50.	I talk to people outside the school on matters that I learn in the lecture room.					
51.	If I do not understand the meaning of a word, I consult the dictionary or ask someone else.					
52.	I try to integrate the knowledge I acquire in solving new problems.					
53.	I try to integrate subjects from different programmes into my general knowledge.					

APPENDIX D

RELIABILITY ANALYSIS FOR THE INSTRUMENT

Academic Engagement

Item Statistics				Reliability Statistics	
	Mean	Std. Deviation	N	Cronbach's Alpha	N of Items
Q 43	8400	1.05141	100	.857	14
Q 44	4000	.82878	100		
Q 45	2900	.91337	100		
Q 46	5300	1.25895	100		
Q 47	3300	1.08297	100		
Q 49	5900	1.24799	100		
Q 50	9900	1.15027	100		
Q 51	7800	1.22746	100		
Q 52	6400	1.18509	100		
Q 53	2600	.97047	100		
Q 54	1600	1.24495	100		
Q 55	1600	1.05141	100		
Q 56	0900	1.02588	100		
Q 57	9700	1.05844	100		

	Item Statistics			Reliability Statistics	
	Mean	Std. Deviation	N	Cronbach's Alpha	N of Items
Q22	1100	.99387	100	.860	19
Q23	1700	.94340	100		
Q24	8300	.92174	100		
Q25	0200	.88740	100		
Q26	1300	.84871	100		
Q27	0900	.01598	100		
Q28	6000	.97442	100		
Q29	4400	.96735	100		
Q31	0800	.99168	100		
Q32	7800	.05006	100		
Q33	9100	.98571	100		
Q34	5600	.89126	100		
Q35	0500	.03840	100		
Q36	3400	.89013	100		
Q37	3500	.85723	100		
Q38	2500	.83333	100		
Q40	1100	.72328	100		
Q41	5100	.01995	100		
Q42	5700	.98734	100		

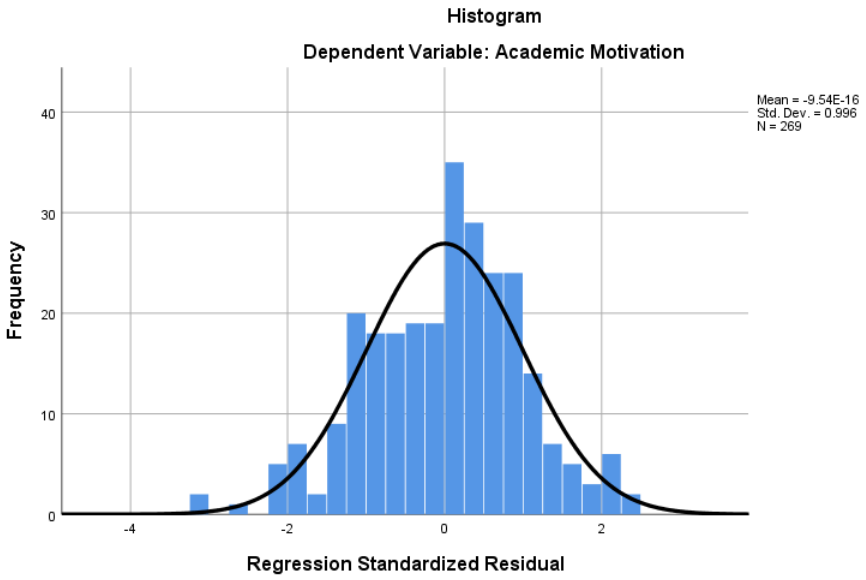
Self-regulated Learning

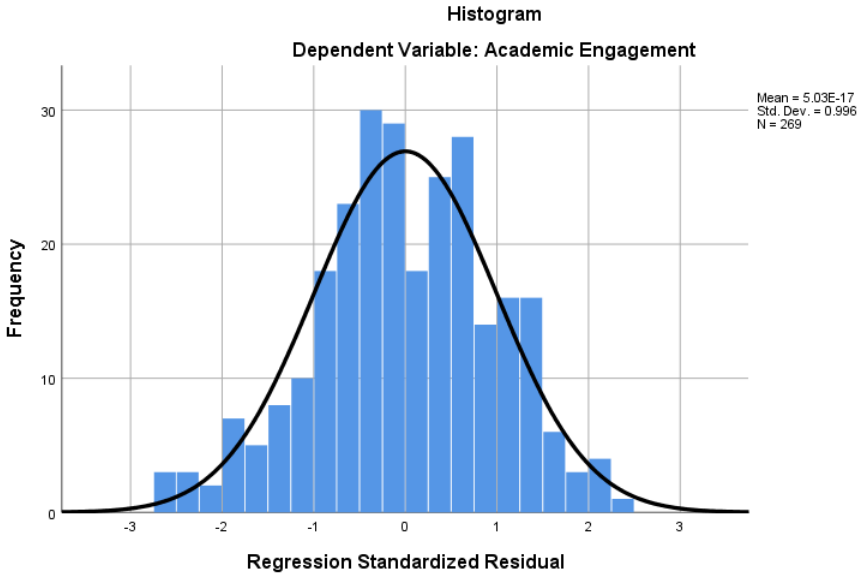
Academic Motivation

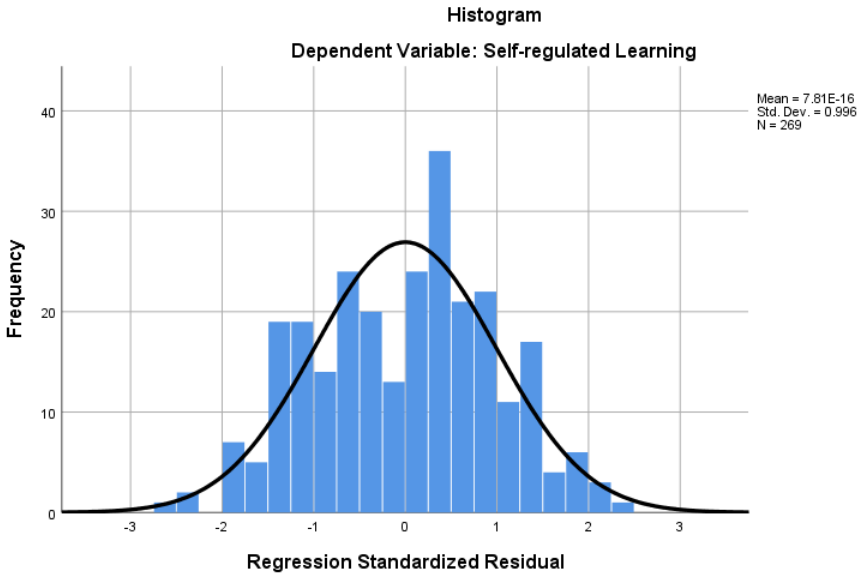
	Item Statistics			Reliability Statistics	
	Mean	Std. Deviation	N	Cronbach's Alpha	N of Items
Q3	3.3200	.76383	100	.879	18
Q4	3.3800	.80126	100		
Q5	3.0600	.83871	100		
Q6	3.7500	.55732	100		
Q7	3.0600	.97255	100		
Q8	3.2400	.94409	100		
Q9	3.1100	.88643	100		
Q10	2.9100	.92217	100		
Q11	3.3900	.70918	100		
Q12	3.2500	.91425	100		
Q13	3.2700	.85108	100		
Q14	2.9300	.90179	100		
Q15	2.8200	1.00885	100		
Q16	3.0900	.81767	100		
Q17	3.0800	.89533	100		
Q18	3.2900	.87957	100		
Q19	3.0300	.82211	100		
Q20	3.3600	.85894	100		

APPENDIX E

TEST OF NORMALITY





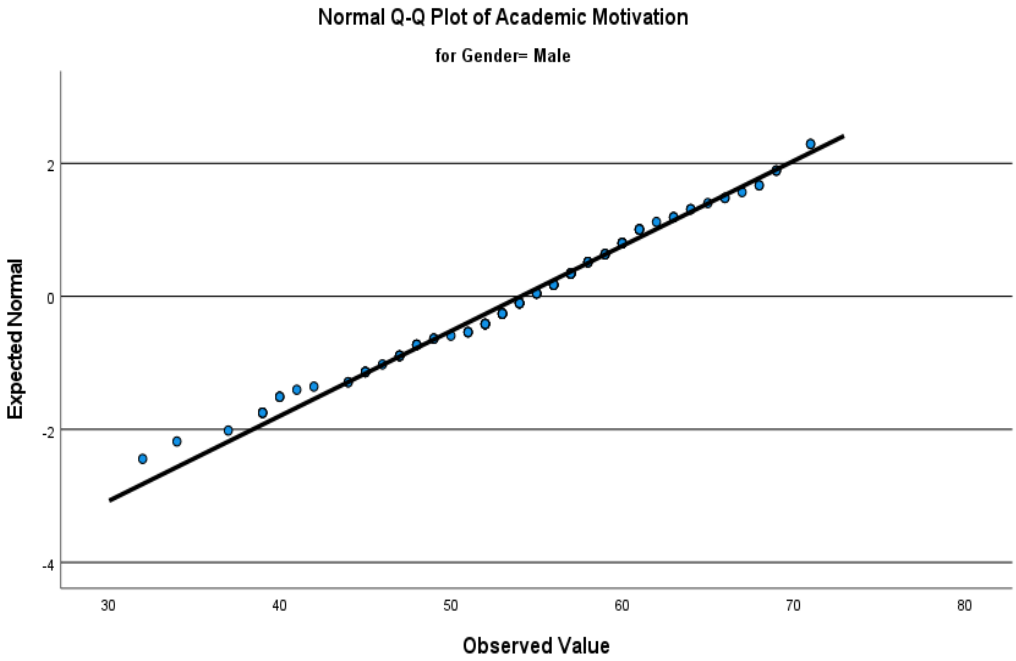


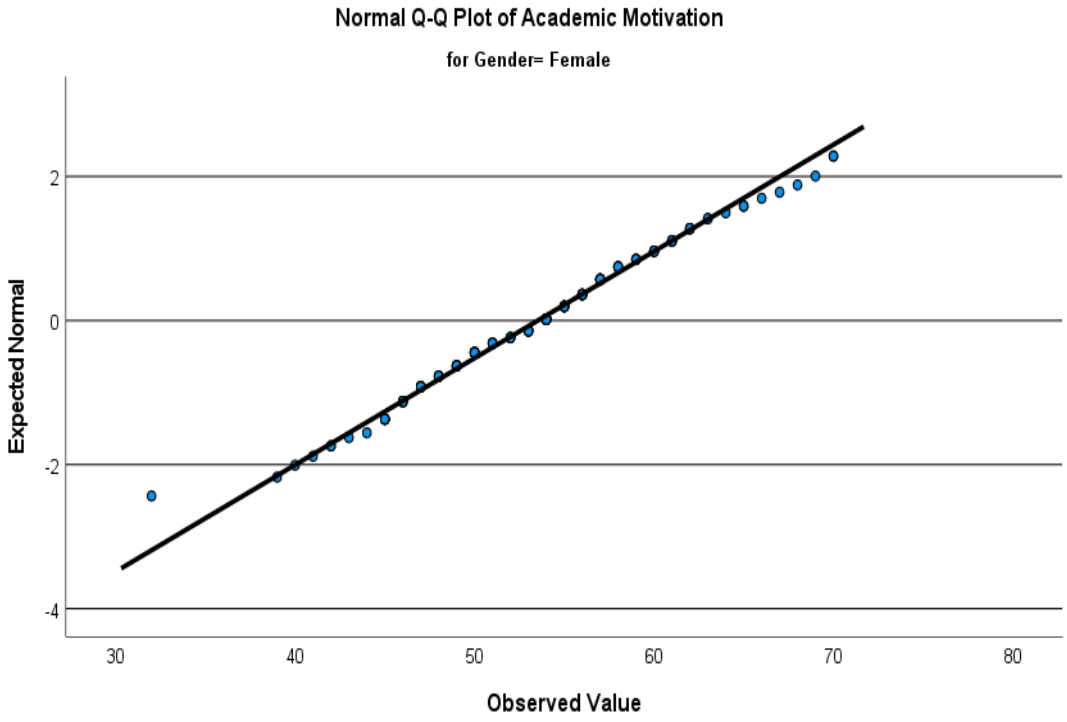
APPENDIX F

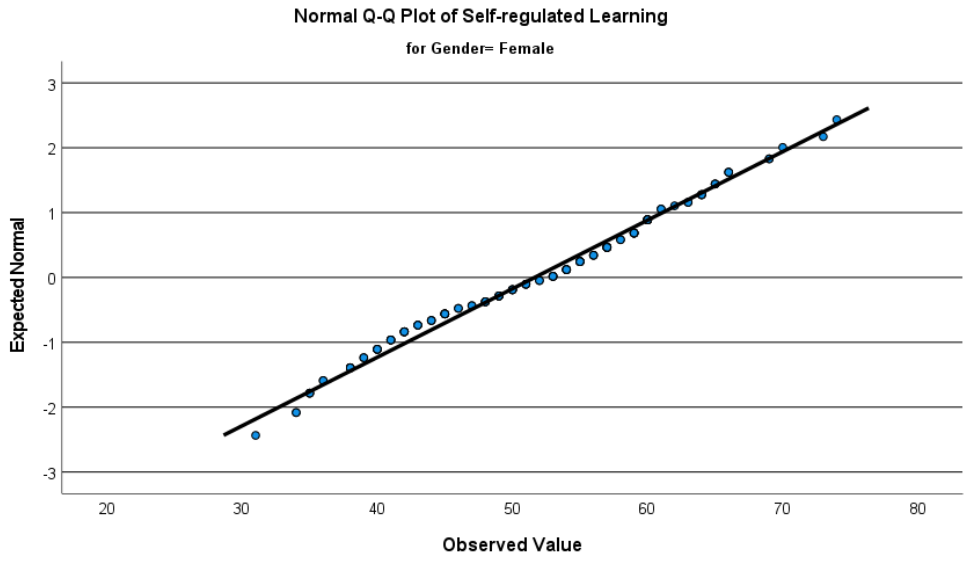
TEST OF NORMALITY FOR SEX

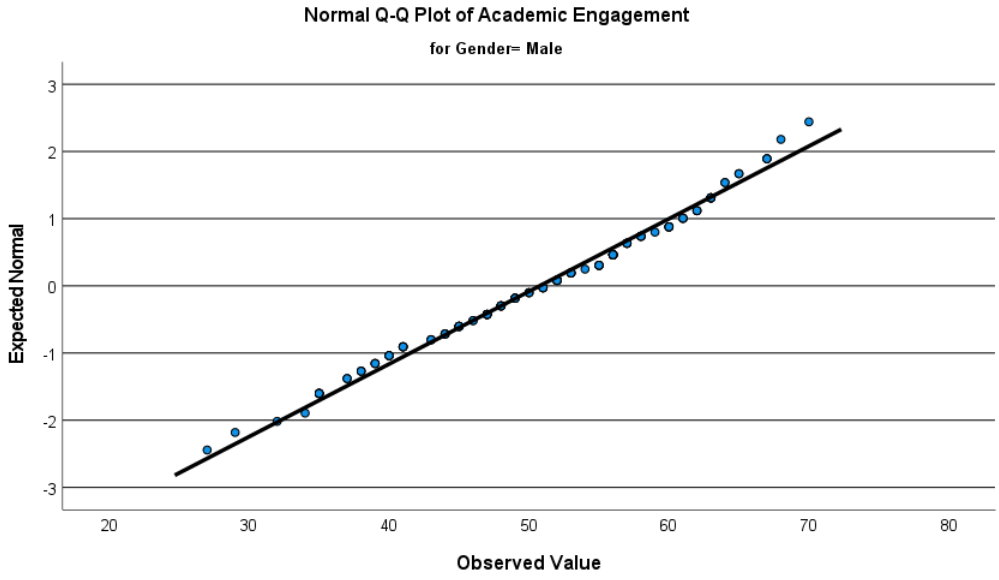
Tests of Normality

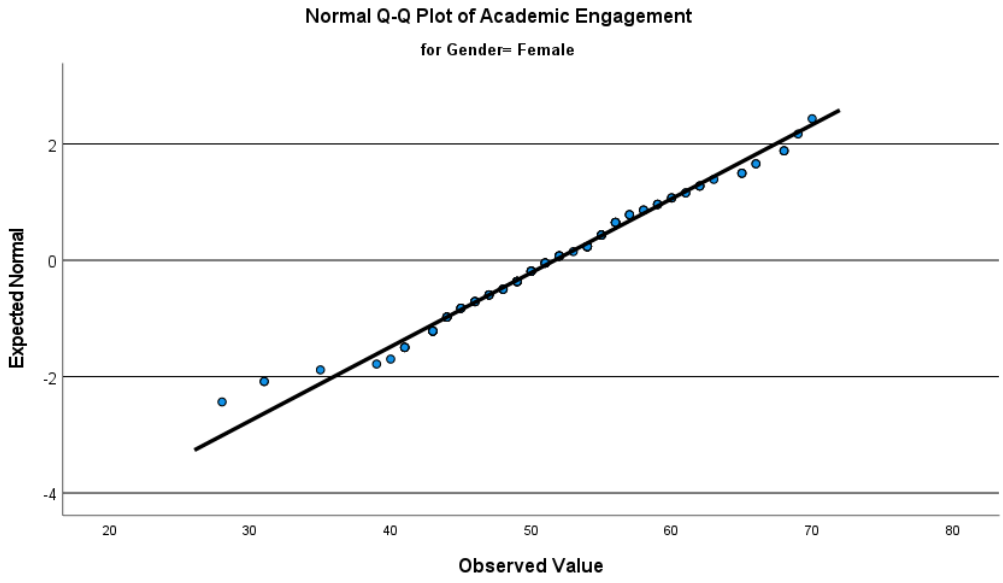
		Shapiro-Wilk		
	Gender	Statistic	df	Sig.
Academic	Male	.985	136	.147
Motivation	Female	.991	133	.545
Self-regulated	Male	.990	136	.408
Learning	Female	.983	133	.093
Academic	Male	.985	136	.146
Engagement	Female	.986	133	.188











APPENDIX G

TEST OF HOMOSCEDASTICITY