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Effect of Home Economics Students' Self-Efficacy and Perception of Teachers Social Learning Environment Management Practices on Their Interest in Integrated Science

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Abstract
Teachers and students spend considerable part of their days in school or classroom environment. Therefore, classroom has to be a pleasant place to go**.** It must be modern, secure and well-functioning surroundings for both students and teachers. Learning environment is valued but also analysed as an indicator of qualitative education. It is not only the aesthetic need why the appearance of the learning environment should be contemporary. But also, since the learning environment impacts considerably on knowledge acquisition and learning activities. Consequently, the result of this study will provide basis for researchers and administrators such as Heads of Science and Home Economics Departments who may be interested in studying about classroom social learning environment management practices in the context of Integrated science, especially regarding Home Economics students, in replicating the study at other geographical areas and also ensure the application of relevant management practices. Thus**,** the purpose of this study was to investigate the effect of Home Economics students' perception of integrated science teachers' management of the social learning environment and self-efficacy levels on their interest in Integrated Science. The research design employed in this study was the cross-sectional survey design. The study was carried out in the Eastern region of Ghana. The target population of this study was all Form Three and Two students who offered Home Economics as a programme in public Senior High Schools (SHS). Simple random sampling technique was used to select 513 students from 26 schools selected from each local government district of the Eastern region of Ghana to participate in this study. In this survey, questionnaires were the main instruments used to gather data. It was found that students self-efficacy levels were high. However, their interest levels in Integrated Science were found to be moderate. The results also showed that the students perceived the management of their social learning environment by the Integrated Science teachers very moderately. We therefore recommend that Integrated Science teachers in Eastern Region Senior High Schools handling Home Economics classes should improve their management of the social learning environment in order to raise students' self-efficacy and subsequently, their interest levels.
Keywords: Integrated Science, Home Economics, Social Learning Environment, Interest, Self-efficacy
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1. Introduction

Teachers and students spend considerable part of their days in school or classroom environment. Therefore, classroom has to be a pleasant place to go (Ryan, 2013). It must be modern, secure and well-functioning surroundings for both students and teachers (Morgan, 2021). The design of the learning environment has to be done with thoughtfulness. Learning environment is valued but also analysed as an indicator of qualitative education (Kiilu, Läänemets, Kalamees-Ruubel, 2020). It is not only the aesthetic need why the appearance of the learning environment should be contemporary. But also, since the learning environment impacts considerably on knowledge acquisition and learning activities. Also, learning is closely related to the time and space it is taking place. It influences pupils' and teachers' health, sense of security and psychological state (Hysa, 2016). Different stakeholders have diverse conceptions about a good learning environment. For instance, Hysa believes that the learning environment creates an atmosphere where learners spend a greater part of their day, while for teachers it determines pedagogical possibilities for conducting lessons. It was further explained that the learning environment promotes students' self-efficacy and development as independent and active learners. It is therefore relevant to ensure that the condition of contemporary home economics classroom also fosters students' learning.

Traditionally, the learning environment has been conceived as the designated classroom or school which in certain context, include the learning space in learners' home (Paes, Tar, Amendments and Caring (2015). Learning environment can be examined from several aspects, such as aesthetical, mental, physical and or social. For example, Brotherus and Hytönen (2001) and Läänemets (2001) asserts that learning environment always contains three main areas. These are made up of the physical features of the learning space (rooms); pedagogical features (learning tools) and human context (interaction between people and the environment). The Ghanaian curriculum emphasizes social and physical aspects of the environment around the student, in addition to the mental side

(NaCCA, 2019).

Numerous researches in diverse fields have found that, characteristics of classroom environments have a direct impact on student motivation and engagement, interest and academic achievements (Malik & Rizvi, 2018). Specifically, these researches have focused on teachers' practices around academic activities, and students' perceptions of these practices. However, classrooms are basically social places. Students learn in the presence of many peers and constantly interact with teachers. They therefore, pursue both social and academic goals in the classroom (Juvonen & Murdock, as cited in Morgan, 2021). Furthermore, teachers are more than subject matter specialists (Hotaman, 2010). Apart from delivering the curriculum, teachers aid learners to construct the classroom social environment with the creation of norms and rules for student social interactions in the classroom (Raspopovic, Cvetanovic, Medan & Ljubojevic, 2017). Laal, Naseri, Laal & Kermanshahi (2013) have also noted that the kind of academic and social responsibilities assigned by teachers have the propensity to either encourage or dissuade cooperation and sharing of ideas, materials and expertise. In addition, Laal, Naseri, Laal and Kermanshahi argues that the types of cooperative structures instituted by the teachers and their mode of appreciating learners' progress and achievements are a contributing factor to the quality of the social environment. Learning environment is also known to affect students' self-efficacy (Lim, 2013).

A number of researchers have sought to find the relationship between academic self-efficacy and other learning dimensions. The results have revealed that the students who had higher self-efficacy put more effort into their academic studies. For example, Lim (2013) observed from the study which used the WIHIC, Test of Science Related Attitudes (TOSRA) and the Morgan-Jinks Student Efficacy Scale (MJSES) on 441 students that involvement and Equity were significant predictors of efficacy. Another study carried out in the USA and Hong Kong by Hanke's (2013) studied 1,309 seventh and eighth mathematics students employing the WIHIC questionnaire, Attitudes towards Mathematical Inquiry and Enjoyment of Mathematics from the Test of Mathematics-Related Attitudes (TOMRA), and Morgan-Jinks Student Efficacy Scale (MJSES). The results indicated a significant and positive associations between learning environment and academic self-efficacy. In that study, involvement once again, emerged the strongest effect on academic self-efficacy. Another study looking for the relationship between classroom environment and students' self-efficacy was conducted in a school in North Texas with grades 4 through 12 students. In that study, Croissant (2014) employed My Classroom Inventory (MCI) and Patterns of Adaptive Learning Survey (PALS) as the main instruments for data collection. It came out that high self-efficacy in mathematics would increase as cohesion and satisfaction increase, and friction and difficulty decrease. Zedan and Bitar (2014) also confirmed the positive relationship between classroom environment and students' self-efficacy. This study was conducted with 900 high school students in Israel. The participants were asked to complete the classroom climate questionnaire in the mathematics lesson, and mathematical self-efficacy questionnaire. The regression analysis revealed that mathematical self-efficacy was effective in predicting achievements in mathematics. The focus of the present study was to investigate the relationship between the dimensions of classroom social learning environment, learners' academic self-efficacy in Integrated science and students' interest in Integrated Science.

Thus, the purpose of this investigation is to explore how various dimensions of the social environment of the integrated science classroom are perceived by Home Economics students. Home Economics is defined as "the science of study that focuses on the inter relationships between resources, diet, health, the home, the individual and family needs, where the central concern is achieving an optimal quality of life for individuals and their families" (Piscopo & Mubliet, 2014). The aim of Home Economics education, as the definition suggests, is to equip students with the knowledge and skills necessary to lead effective lives in different roles and contexts in society; specifically, to maintain and promote healthy behaviors, become productive citizens and adapt in a fast-changing world. Home Economics as a programme of study also focuses on creating opportunities for students and practitioners on the job market and affords students many opportunities to become self-employed. This definition, for example, shows that home economics is a more or less a social venture, both in school and practice outside of school. The Home Economic graduate is therefore directly and consistently expected to interact with humans on daily basis. To what extent are these future social interactions been modeled in the classroom? Social interaction among students has also been found to be positively correlated with reading engagement (Hurst, Wallace & Nixon, 2013; Guthrie, Schafer, Wang, & Afflerbach, 1995 as cited in Morgan, 2021), and additionally other researchers (e.g., Ryan, 2011; Leka, 2015) have shown that successful peer relationships are important for school adjustment and academic achievement. However, the extent to which peer and teacher interactions are practiced in Integrated science teaching among Home Economics classrooms has not been much researched, especially within the Ghanaian context. Furthermore, the role that the teacher plays in creating the social environment within which classroom peer relationships develop has also received little attention. In short, there is a need to investigate the state of the social environment in the Home Economics classroom.

1.1 Statement of the Problem

Home Economic students have been cited usually among the none General Science students with lower interest,

high phobia for and lower academic achievements in integrated science especially with concepts relating more to physics and Chemistry (Atmanto, Irtawidjajanti & Arum, 2019). Students' achievement in integrated science, over the years, has given cause for studies directed at the identification of causes of the observed poor performance and factors that could help at mitigating them. The problem has been attributed to a number of factors in and out of the classroom. These factors include teaching methodology employed by integrated science teachers, teachers' classroom management practices, and students' low interest in the subject, among other things (Buabeng, Ossei-Anto & Ampiah, 2013, Morgan, 2021). Even though the factors may be myriad, it appears from the available literature that whereas other factors (such as teaching methodology) have been extensively studied little attention has been given to the social learning environment created by the teachers for the utmost performance of the home economics student. Orleans (2007) has explained that what comes out of the schooling period is contingent on what transpires in the classroom.

As stated earlier, classroom social learning environment are crucial factors that affect the academic achievement of students, and also the eventual success of even a well-developed and comprehensive curriculum its hinged on the quality of the teachers implementing it (Ajaja, 2009; Ughamadu, 2005). However, not much work has been reported on social environment dimensions such as teacher support, student cooperation, cohesion, differentiation and equity among Ghanaian Home Economic students especially within the context of Integrated Science. What is therefore lacking currently is research work that seeks to elucidate the current state of integrated science teachers' classroom management practices as perceived by home economics students, their self-efficacy and interest in Integrated Science. The result of this study will provide basis for researchers who may be interested in studying about classroom social learning environment management practices in the context of Integrated science, especially regarding Home Economics students, in replicating the study at other geographical areas. In addition, this work will help integrated science teachers to know about and employ classroom management practices which are favorable to Home Economics classes. Finally, this work will add to the minimal literature available on the relationship between Home Economics students Integrated Science self-efficacy, classroom social environment and interest in Integrated Science.

1.2 Purpose of the Study

The purpose of this study was therefore to investigate the relationship existing between economics students' perception of Integrated Science teachers' management of the social learning environment, their self-efficacy and interest levels in Integrated Science. In view of the above, the following research questions were raised:

1. What are Home Economics students' academic self-efficacy and interest levels in Integrated Science?
2. What are home economics students perceived integrated science teachers' social learning environment management practices?
3. What is the combined effect of Home Economics students' self-efficacy and perception of the social learning environment on their interest in Integrated Science?

2. Literature Review

2.1 Classroom Social Learning Environment

A learning environment can be examined from several angles. Traditionally it has been understood as the classroom or school, in some context including also the learning space in students' home. Historically, Collins and Brown (1989) (cited in Piscopo & Mubliet, 2014) defined the characteristics of an ideal learning environments, naming content, method, sequence and sociology as four dimensions that constitute any learning environment. Whiles, Brotherus and Hytönen (2001) and Läänemets (2001) alike, claim that learning environment always contains three main areas. These are rooms (the physical features of the learning space); learning tools (pedagogical features) and human context (interaction between people and the environment). It is broadly considered to be an environment which supports pupils' development and learning. Ghanaian curriculum also emphasizes social and physical aspects of the environment around the pupil in addition to mental side (NACCA, 2019).

From a constructivist point of view, Tynjälä (1999) however defines learning environment from the learners' perspective. He names previous knowledge and beliefs, attention to metacognitive skills and knowledge, the integration of knowledge acquisition and knowledge use, the use of multiple representations of concepts and information, and assessment embedded in the learning process. Similarly, some authorities have pointed out that learning environment includes the psychological climate and atmosphere in the school and classroom (Malik, 2018). With the development of learning theories new aspects have been added to this concept. For instance, learning outside the classroom – in a museum, shop etc. The development of technology has also widened the meaning of learning environment by adding virtual learning opportunities (IT involvement or computer usage) (Cook, 2014).

Regardless of the way the concept of learning environment is defined the main role of the learning environment remains constant – to motivate pupil, to offer possibilities for learning activities and to support achieving goals. In this study, the learning environment is considered to influence participants during teaching and

learning in home economics lessons. The learning environment promotes pupils' development as independent and active learners. Home economics as a school subject gives pupils possibilities to integrate theoretical knowledge with practical activities. It gives knowledge and skills for pupils' everyday life and is targeted to develop individuals that are able to analyses situations and act responsibly.

Therefore, home economics classrooms should meet the contemporary requirements for achieving learning outcomes. Pink (2010) stresses that for school subjects with practical orientation like home economics it is essential to have an elaborated and proper learning environment. The characteristics of a particular subject and its unique learning tasks shape the direction of the development of learning environment (Kanarbik, 2012). A home economics class is different compared to other classrooms, its furniture and equipment is specific. Therefore, only the subject's teacher is able to frame the necessary requirements for home economics classroom according to the syllabus and learning methods they will use. The growing social communication between people necessitates that the learning environment which connects students would also change from physical into social and by that support students. The social learning environment should occupy a central position in the school curriculum as it emphasizes the pupil's interaction with the teacher, each other and the environment (Põhikooli, 2011). Learning in home economics lesson is often collaborative and therefore this subject is good for pupils to practice social skills, benign and respectful attitude toward fellow pupils; ability to organize and cooperate; and skills to analyze and evaluate joint work (Pink, 2010). Some of the dimensions of social environment include support from the teacher, cohesion among students, cooperation on task, equity and learner involvement.

2.2 Dimensions of Classroom Social Learning Environment

2.2.1Teacher support

Teacher support has been defined slightly differently by various researchers (e.g., Goodenow, 1993; Fraser & Fisher, 1982; Skinner & Belmont, 1993), but it generally involves characteristics such as caring, friendliness, understanding, dedication, and dependability. Thus, teacher support refers to the extent to which students believe teachers value and establish personal relationships with them. Perceived teacher support has been linked to students' achievement motivation. When students perceive their teacher as supportive, they report higher levels of interest and enjoyment in their schoolwork (Goodenow, 1993; Skinner & Belmont, 1993), a more positive academic self-concept (Felner, Aber, Primavera, & Cauce, 1985), and greater expectancies for success in the classroom (Goodenow, 1993).

Longitudinal research has shown that perceived teacher support has a stronger effect on students' motivational beliefs during junior high school compared to elementary school (Midgley et al., 1989). Perceptions of teacher supportiveness and confidence, that help will be available if needed, would be expected to decrease students' anxiety about task engagement. Such anxiety undermines self-regulated learning (Pint rich & De Groot, 1990). In addition, I hypothesize that perceptions of teacher support will facilitate students' social efficacy relating to the teacher and reduce disruptive behaviour in the classroom. In addition to perceptions of teacher-student relationships as being supportive, I suggest that teacher messages about student-student relationships may also contribute to the classroom social environment.

2.2.2 Student cohesiveness

Two different dimensions that teachers may communicate to students about their relationships with class mates around academic tasks have been suggested. These are: (a) other students are valuable resources with whom you work to increase learning (promoting cohesion); and (b) other students are to be shown respect and support (promoting cooperation). This encompasses students sharing ideas during whole-class lessons, working together in small-group activities, or informal help-seeking and help-giving during individual seatwork. Whatever the form, however, interaction among students is a critical component of student-centered instructional approaches. When students are encouraged to interact and exchange ideas with each other during academic tasks they have opportunities to justify their own position and gain exposure to other possibilities (Webb & Palincsar, 1996). Adolescents' increased capacity for considering others' perspectives, generating options, being reflective, and evaluating alternatives (Keating, 1990) suggests that interaction in the classroom may be especially beneficial at this stage. Students should feel more efficacious about their ability to learn and complete activities successfully when interaction among students is promoted, because they have a greater array of resources on which to draw than if they were only working individually.

Cohesiveness is exhibited in many different aspects of human and organizational existence: across linguistics through music to ecology, as seen in the harmonious communication and compactness (Hysa, 2016). It is observed that one major reason students do not attain higher productivities in group work is due to the absence of group cohesiveness (Anwar, 2016). Cohesiveness of a group has been defined by Festinger (1952, p.274) as "the resultant of all the forces acting on the members to remain in the group". But for the purpose of this study Carron' s (1982) definition will be more appropriate. Carron defines cohesion as "a dynamic process which is reflected in the tendency for the group to stick together and remain united in the pursuit of its goals and objectives (p.125). Festinger's definition is explained in terms of the attraction to the members of a group and to the group as a unit

(Festinger et. al. cited in Hysa, 2016) as is also reiterated by Hogg and Vaughan (2011, p. 290).

The attraction between the individual members in a group is a basic element for the group survival and success, when strengthened could completely alter an adjoined group into cohesive one. Group cohesiveness is therefore achieved by the willing connection of separate visions of individual members acknowledging the interaction advantage of their synchronization and nature of attraction existing in the group. The greater the attraction, the greater the cohesion and the tendency for members to persist in the group. Attraction has been described as the main driver of cohesiveness (Vaughan, 2011). Hysa (2016) identified two forms of attraction-personal attraction and social attraction. He explains that personal attraction is based on personal inclinations and intimate relationships, however the social attraction is depersonalized and the perception is based on group norms. Social psychologists have listed a number of determinants of attraction, of particular importance include common interests, proximity, similarity and complementarity of attitudes and common experience (Barlie, 2013). Some of these factors tend to have more lasting effect on the group lifespan.

In general group cohesion is approached basically from two perspectives. These perspectives are operationalization and socialization with the latter being a foundation for the former (Hysa, 2016). Social cohesion is a selective process in that, members of a group in trying to fulfil their need to socialize with each other are attracted to those with similar information, mentality and values. Operationalisation perspective is also sometimes referred to as task cohesion. Classroom groups are supposed to be seen more as task-oriented group rather than socialisation group, however a little element of the latter is necessary for the group survival and goal achievement. The group is only ready to accomplish the common goal or the set task only when social cohesion is established (Hysa, 2016).

Cohesiveness may also be considered either as emotional or rational (Hysa, 2016). It is rational when the individual expects the group to satisfy developmental, financial and or professional interest and it is emotional when possibility to contribute valuable and offer real benefits is the expectation. Student cohesiveness is therefore more emotional rather than rational. Of what use then is this attractiveness, emotional or rational cohesion or social and operational cohesion in the physics classroom and how is this related to physics students' interest. The literature is silent on this; however, its relationship with performance, achievement, motivation and satisfaction in general have been looked at by several researchers (Anwar, 2016).

Group cohesiveness is found to be positively related to group performance (Forsyth, 2010) and satisfaction (Hellriegel & Slocum, 2011). The relationship between cohesiveness and performance, according to Hysa (2016) is bidirectional but performance seems to influence cohesion with a greater weight (.51). Anwar (2016) on the other hand, links cohesiveness to interest of individuals in the group, demonstrating that performance, cohesion, interest and group success are interrelated. He also identified three elements that affect cohesiveness in learning in general. These elements were listed as a) interpersonal attraction, commitment to task and group pride. Though Anwar suggested that the blend of two or all of these elements a driving for better cohesion in the group, he admitted that each of the elements could solely drive group cohesion (p.22).

Another remarkable assertion of Anwar has to do with his admission that success of group cohesion is contingent on teachers' effective leadership, arguing that teachers who are able to focus their students on cooperate goal and encourage them towards teamwork succeed in group cohesion. By this Anwar points to the role of the teacher in student cohesiveness as a facilitator and leader, an opinion he shares with Galajda (2012) and Burke (2011). This underscores the importance of studying students' cohesiveness as a dimension of Integrated science teachers' social classroom practices.

2.2.3 Student Cooperation

Student cooperation as used in this study measures the extent of teamwork among students. The terminology enjoins students to work in groups when doing assignments, project works and on other class activities, during which time they share books and other learning resources, learn from each other in order to achieve class goals. Collaborative learning happens whenever students help each other. It inculcates in students, tolerance, respect for each other's views, abilities and contributions. In their literature review on CL and its potential advantages Laal, et. al. (2013) categorised the benefits of student cooperation into four broad areas: as social, psychological, academic and assessment benefits. The social benefits include development of social interactions and increase in positive social behaviours (e.g., honour, friendliness and hatred for violence). Increase in self-esteem and improvement in problem-solving skills and high-level thinking constitute psychological and academic benefits respectively. Finally, collaborative learning techniques use alternate assessment strategies. With regard to self-regulated learning, Ryan (2001) and McCaslin and Good (1996) found that positive interactions among class mates support students' self-regulated, or "coregulated", learning. In line with this, it is expected that an environment in which students are encouraged to discuss their schoolwork and explain aspects of the task to one another will support students' strategic and planful task engagement. Also, a focus on encouraging student interaction in the classroom should also promote social development (Savin-Williams & Berndt, 1990).

2.2.4 Student Differentiation

It is important that learners are not just put in a block and treated as one. Conventional instructional approach is

not enough to help learning in classrooms with students having distinct gender and varied needs (Njagi, 2015). This has resulted in a sizeable number of students reporting poor achievement, while another sizeable number is unable to operate at their optimum best. Njagi also reports that a number of factors including gender differences and inadequate pedagogical practice may be responsible for this (Njagi, 2015). But a quality science education requires that learners' individual differences, interest and skills are taken into consideration and differentiated instruction does just that, to provide opportunity appropriate for the learner differences (Ruhan & Yasar, 2010). Differentiated instruction is based on the understanding that learners have their individual uniqueness pertaining to learning needs, learning styles interest and skills. Research has found that some learners find practical texts more appealing, others feel theory is interesting and still others prefer creative activities (Kahu, Nelson & Picton, 2017).

Differentiated instruction is an improved teaching approach that aids learners with varied educational needs and studying styles to master the same academic content (Tomlinson, 2003). Tomlinson further asserts that in a differentiated classroom the teacher accepts, embrace and plan for learner differences, acknowledging their individualism. They respond to questions, process information and make choices in different ways. This difference is especially prominent when considering boys and girls and this may account for the disparity in interest and achievement reported as existing between boys and girls. Though Njagi (2015) and Eaton (2005) reports significant difference in achievement between students exposed to differentiated instruction and those exposed to conventional instruction (without elements of differentiation) however, the impact of differentiated learning on students' interest is not well reported.

2.2.5 Student Equity

"Equity in education pays off" (OECD, 2012). According to the OECD equity in education means factors such as personal or social circumstances (ethnic origin, family background or gender should not be impediments to achieving educational potential and that all learners attain set minimum level of skills (p.9). This implies the teacher must ensure fairness and inclusivity in the classroom. In the absence of these being exhibited openly in the classroom, learners' fail to persist in school and there is lower achievement and high rate of drop out in the subject or course. The OECD reports that 20% of young adults drop out of school before completing upper secondary school due to absence of fairness and inclusion (p.9). The OECD reports that teachers receive training appropriate to work with disadvantaged students explaining that certain pedagogical practices can make a difference for low performing students (p.12). However, research work that directly links the home economics classroom environment with integrated science is lacking.

2.2.6 Involvement

Involvement could be framed as the physical and psychological effort put out concerning the academic encounters (Sidelinger, 2010). Involved students basically talk and are willing to talk in class: discuss ideas, respond to teachers questioning and ask the teacher questions, give their opinions and explain their ideas to the teacher and to other students as well. Students' willingness to engage in assignments outside the classroom could also be considered as involvement. Sidelinger has cited other sources that student involvement is found to have various impacts on learning. It leads to greater acquisition of knowledge and skill development. Involved students exhibit higher levels of cognitive skills and knowledge gain and positive personal growth; they are more ready and determined to learn and succeed and tends to persist in school. Despite these observed advantages the influence of student involvement on students' subject interest has not been reported. This work intends to fill that gap in literature by relating the two variables statistically.

In his study of student involvement, Sidelinger (2010) found that both student characteristics and perceived instructor communication behaviours influence student involvement. The study which used voluntary participation of 346 undergraduates in a communication course revealed that teacher clarity did not influence students' in-class involvement but student out-of-class involvement. Students get involved for different reasons such as seeking information or clarification, to have something to contribute during class discourse, participatory learning and enjoyment. He therefore explained this finding thus when teachers are so clear, well organized and explicit there will be no need for students to seek information by asking questions in class. However, students will be better positioned to follow the teachers comments to attend to work outside classroom. Sidelinger further cites not well formulated ideas, lack of knowledge about topic under discussion, inability to complete assignments and likelihood of appearing unintelligent among peers as some reasons for non-involvement among students. Sidelinger's study also did not relate student involvement with students' interest. Student involvement serves as one indicator that learning is occurring in the classroom (Richmond & Gorham, 1992). Similarly, Weaver and Qi (2005) asserted that students are more academically successful when they are actively engaged in the learning process. Thus, it is important for educators to find a way to connect students with course content, especially if students are not as excited as they are about it (Richmond, 1986).

The National Survey on Student Engagement (NSSE, 2007) argued that in order to get students involved they must be engaged in high impact activities, which will encourage students to work extensively on purposeful tasks. Essentially, these high-impact activities demand that students frequently interact with faculty and peers in a

substantive way. Ultimately, it is important and possible to move students toward increased involvement. When this happens, students are more likely to succeed in school. Prior research suggests when students feel a sense of importance in class, they are more likely to become more proactive (Kickul & Kickul, 2006). When students play an important role in the classroom and are assigned more responsibility in class (e.g., group leader) they develop a sense of proactivity over time in the classroom (Kammeyer-Mueller & Wanberg, 2000). Hence, whenever possible, instructors need to help students develop a sense of proactivity and an internal academic locus of control.

2.3 Home economics programme and the social learning environment

Home Economics focuses on the inter-relationships between resources, diet, health, the home, the individual and family needs, where the central concern is achieving an optimal quality of life for individuals and their families" (Piscopo & Mubliet, 2014). In view of this the people being trained in this field should be trained using practices which are more socially oriented. Some learning research supports the argument that the social learning environment of the classroom will be important for students' motivation and engagement. For example, Goodenow (1993) and Skinner & Belmont (1993) as cited on Morgan (2021) have found that a sense of relatedness or belongingness at school is positively associated with students' expectancies for success and intrinsic value for school. It should be emphasized that expectancy and valuing are both predictors of students's motivation (Ainley & Ainley, 2011).

2.4 Self-efficacy in science learning

Self-efficacy is defined as the confidence people have in their abilities to successfully perform a particular task (Bandura, 1997). Self-efficacy is a core feature of social cognitive theory, which implies that people do not merely respond to influences within their environment, but actively seek out and interpret information in order to make decisions (Juan, et al., 2018). Bandura (1986), further explained self-efficacy as a personal expectation of one's ability to perform in order to reach specific goals. When applying this to education, the expectation, in turn, affects students' motivation, interest and performance in all subjects including science.

Self-efficacy in science affect science learning, choice of science, amount of effort exerted, and persistence in science (Kennedy, 1996). This has an impact on changes in behaviour, as those with a high self-efficacy are more likely to exhibit greater persistence in achieving success no matter the level of difficulty, and the approach the tasks will become (Tuan, et al., 2005). Conversely, those with a low self-efficacy believes that tasks are more difficult than they use to be, and consequently experience stress and anxiety when facing these challenges (Pajares, 1996). Low self-efficacy negatively affects the academic performance of students, and can over time, create self-fulfilling prophecies of failure and learned helplessness that can devastate psychological wellbeing. Students with low self-efficacy give up more easily in their academic pursuits than students with high self-efficacy. A student's level of self-efficacy is influenced by past successes and failures which can then subsequently impact future successes or failures, such as grades.

Self-efficacy is determined by enactive mastery experience, vicarious experience, verbal persuasion, and physiological and emotional states (Bandura, 1986). The most influential of these factors is enactive mastery experience, which refers to individuals' experiences with success or failure in past situations. Information gathered from these experiences is then internalized. Past successes raise self-efficacy and repeated failures lower it, which indicates to individuals their levels of capability (Bandura, 1997). Gender is also another major factor for the success and the failure among students from elementary schools according to Ryckman & Peckman (1987). Hill (1990) found that middle and high school girls lack interest in science carriers and in science related activities outside of school. In addition, Schunk (1982) defined self-efficacy as a personal judgment towards to what extent their own ability plays in an achievement that may include unpredictable and stressful element.

Self-efficacy is not static and can change over time resulting from periodic reassessments of how adequately one's performance has been (Bandura, 1986). For example, in a college population, chemistry lab self-efficacy increased over the course of a school year whereas biology self-efficacy decreased over the same duration (Smist, 1993).

2.4.1 Self-efficacy and Students Achievement in Science

Science is considered an important area of education in many countries, as it contributes to increased science and technology knowledge and increased scientific development in higher education and other related fields, while scientific knowledge has an economic utility and cultural significance. It is therefore concerning that there has been a global decrease in the number of students choosing to pursue science. This shift is particularly apparent in the final years of secondary education (Sarjou, et al., 2012). Ghana is no exception to this trend (Buabeng, Ossei-Anto & Ntow, 2013). Self-efficacy is defined as the confidence people have in their abilities to successfully perform a particular task (Bandura, 1997). Self-efficacy is a core feature of social cognitive theory, which implies that people do not merely respond to influences within their environment, but actively seek out and interpret information in order to make decisions (Juan, et al., 2018). Bandura (1986), further explained self-efficacy as a personal expectation of one's ability to perform in order to reach specific goals. When applying this to education,

the expectation, in turn, affects students' motivation, interest and performance in all subjects including science.

Self-efficacy in science affect science learning, choice of science, amount of effort exerted, and persistence in science (Kennedy, 1996). This has an impact on changes in behaviour, as those with a high self-efficacy are more likely to exhibit greater persistence in achieving success no matter the level of difficulty, and the approach the tasks will become (Tuan, et al., 2005). Conversely, those with a low self-efficacy believes that tasks are more difficult than they use to be, and consequently experience stress and anxiety when facing these challenges (Pajares, 1996). Low self-efficacy negatively affects the academic performance of students, and can over time, create self-fulfilling prophecies of failure and learned helplessness that can devastate psychological well-being. Students with low self-efficacy give up more easily in their academic pursuits than students with high self-efficacy. A student's level of self-efficacy is influenced by past successes and failures which can then subsequently impact future successes or failures, such as grades. Self-efficacy is determined by enactive mastery experience, vicarious experience, verbal persuasion, and physiological and emotional states (Bandura, 1986). The most influential of these factors is enactive mastery experience, which refers to individuals' experiences with success or failure in past situations. Information gathered from these experiences is then internalized. Past successes raise self-efficacy and repeated failures lower it, which indicates to individuals their levels of capability (Bandura, 1997). Gender is also another major factor for the success and the failure among students from elementary schools according to Ryckman & Peckman (1987). Hill (1990) found that middle and high school girls lack interest in science carriers and in science related activities outside of school. In addition, Schunk (1982) defined self-efficacy as a personal judgment towards to what extent their own ability plays in an achievement that may include unpredictable and stressful element.

Self-efficacy is not static and can change over time resulting from periodic reassessments of how adequately one's performance has been (Bandura, 1986). For example, in a college population, chemistry lab self-efficacy increased over the course of a school year whereas biology self-efficacy decreased over the same duration (Smist, 1993).

It is therefore concerning that there has been a global decrease in the number of students choosing to pursue science. This shift is particularly apparent in the final years of secondary education (Sarjou, et al., 2012). Ghana is no exception to this trend.Academic achievement is influenced by a multitude of factors. For example, attitude leads to achievement (Schibeci & Riley, 1986), and aptitude is needed for successful performance (Schunk, 1991). Academic performance is as a result of intellectual capability and motivation as well (Bandura, 1997). Self-efficacy predicts intellectual performance better than skills alone, and it directly influences academic performance through cognition. This may indirectly affect perseverance (Bandura, 1997). Although past achievement raises self-efficacy, it is student interpretation of past successes and failures that may be responsible for subsequent success. Perceived self-efficacy predicts future achievement better than past performance (Bandura, 1986; Chemers, et. al., 2001).

In order to promote self-efficacy in science, classroom teaching should incorporate practices which motivate students and enhance their confidence in their abilities. Students rely on the judgement of others to make their own judgements of confidence and self-value. As such, teachers have a responsibility, beyond classroom instruction, to nurture the self-beliefs of their students (Pajares, 2002). Teachers should also aim to increase their students' confidence as they progress through school, starting as early as possible so that self-efficacy is developed as a habit (Pajares, 2002).

2.5 Classroom social learning, self-efficacy and interest in science and student performance in science

The concept of learning environment as perceived by Balog (2018), consists of people, teaching materials, technical tools, learning resources, curriculum, training and instruction, and physical learning space. Attitudes towards science reflect the culture which exists within a school, as well as the wider social context within which learning takes place. As a result, understanding attitudes is a key component of the interpretation of achievement results (Juan, et al., 2018). Positive attitudes towards science are considered to be a central component of an individual's scientific literacy, but are often overshadowed by the emphasis placed on science achievement scores (Bybee, & McCrae, 2011). Although achievement scores provide an understanding of an individual's aptitude and problem-solving skills, attitudes offer an emotional evaluation of science as significant determinants of behaviour in relation to the learning process (Hassan, 2008). In addition, attitudes towards science are a reflection of the school climate and culture, and highlight the social context in which learning takes place. As such, understanding attitudes is important in the interpretation of achievement results (Juan, et al., 2018).

The literature is replete with evidence of interrelationship between classroom learning environment, self-efficacy and interest in various domain but virtually none relates the three variables in a single study. For example, Morgan and Aboagye (2022) studied the relationship between the classroom environment management practices and students' interest in a science subject (Physics) and concluded that there existed a significant positive correlation between certain classroom social learning environment management practices such as student involvement and cooperation. In their study, Morgan and Aboagye also found that involvement and cooperation

were also significant predictors of students' interest. A similar significant relationship (r=.649) has also been found between the classroom environment and students' interest in English Subject by Saputri (2019).

On the other hand, Daemi, Tahriri and Zafarghandi (2017) examined the relationship between classroom environment and learners' academic self-efficacy. The study which used the What is Happening In This Class? (WIHIC) scale and the Self-Efficacy for Learning Form (SELF-A) reported a significant relationship between learners' classroom environment and their self-efficacy (rho =.438). Another study by Nuutila et al. (2020) examined the reciprocal relationship between self-efficacy, interest and performance. It came to light that there was a bidirectional relationship between the variables of interest and self-efficacy.

Conceptual Framework

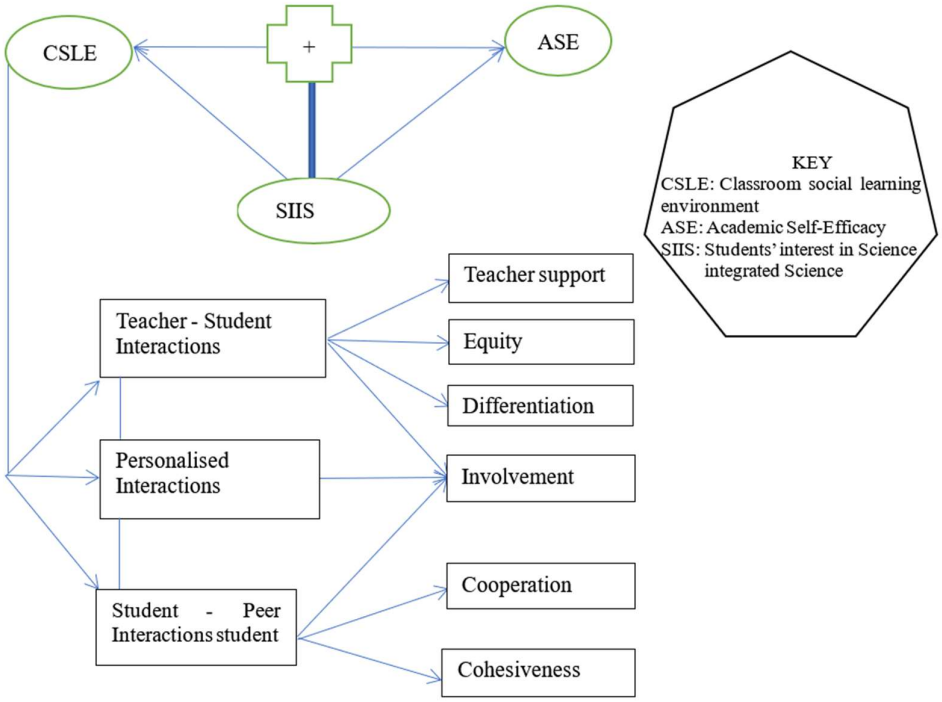

Figure 1: Conceptual Model of the Study

The learning environment has been theorized to always contain three main areas: the physical features of the learning space, pedagogical features and human context (Malik, 2018). This study takes a look at the human context depicted in Fig. 1. The last dimension of the classroom social environment under consideration is tripartite in nature. It brings together teacher factors, peer factors as well as the individual factors. This dimension is termed involvement and describes the extent to which the student takes part or gets involved in class activities by himself, through the effort of the teacher or classmates.

As depicted by the thick double arrows, the teacher's means of dealing with the students influence the manner in which the students interact with each other and that in turn also influence their interaction with the teacher and the way they get involved with classroom activities.

3. Research Methods

The research design employed in this study was the cross-sectional survey design with some elements of correlation to investigate the combined effect of self-efficacy and perception of the classroom social learning environment on students' interest in Integrated Science (Creswell, 2012). The study was carried out in the Eastern region of Ghana. The population of this study was made up of all Form three and two students who offered Home Economics as a programme in public senior high schools (SHS). Form three and two students were used because at the time of data collection, they had interacted more with their Integrated Science teachers to be able to form a proper perception of the classroom social learning environment created by the teachers. Simple random sampling technique was used to select students to participate in this study. This study used students from 26 selected from each local government district of the Eastern region of Ghana. The sample was made up of 483 females (94.2.0%) and 30 males (5.8%), with 12 (2.3%) age below 16 years, 309 (60.2%) aged 17 and 192 (37.4%) aged 18 and

above. Also 177 of the respondents were second years and 336 were final year students.

In this survey, three questionnaires were the main instruments used to gather data. The first questionnaire was named Integrated Science Self efficacy scale (ISSES); the second was Teacher Classroom Social Learnning Environment Management Practices (TCSLEMP) and the last one was named Students' Interest in Integrated Science (SIIS). The ISSES scale consisted of five items which measured students' self-efficacy levels in Integrated Science. The TCSLEMP was made up of 64 items belonging to six sub-dimensions of the classroom social learning environment scale. These sought respondents' perceptions about their teachers' classroom social learning environment management practices. The items were adopted from the WIHIC scale developed by Dorman, Aldridge and Fraser (Skordi & Fraser, 2019). Finally, the SIIS scale was made up of 12 items that measured students' interest levels in Integrated Science. The SIIS scale followed a five-point Likert scale with ratings ranging from 1 always disagree to 5 (always agree). Items on the TCSLEMP scale were made up of eight items belonging to six sub-scales namely, teacher support, students' cooperation, cohesiveness, involvement, equity and differentiation. The score point ranged from 1 (almost never) to 5 (almost always). Reliability coefficients of .81, .88 and .94 were obtained for the overall SSES, SIIS and TCSLEMP scales respectively. These are reputable coefficients for the determination of the appropriateness of an instrument (Fraenkel & Wallen, 2001).

4. Results and discussions

4.1 Home Economics students' Integrated Science Self Efficacy level

To answer research question one on Home Economics students' Integrated Science Self Efficacy and interest levels, the means and standard deviations were computed as shown in Table 1. it is observed that the mean self-efficacy of Home Economics students in Integrated Science was (M=3.43, SD=.76) and that of Home Economics students Interest in Integrated Science was (M=3.04, SD=.70).

Table 1: Home Economics students' self-efficacy and interest levels in Integrated Science (N=513)

	Mean	Std. Deviation
Integrated Science self-efficacy level	**3.43**	**.76**
Integrated Science interest level	**3.04**	**.70**
Valid N (listwise)		

To interpret the result a format as shown in Table 2 was adopted (Morgan & Aboagye, 2022). Based on the format in Table 2 and the computed means Table (1) it was found that Home Economics students' Integrated Science self-efficacy was high (M=3.43, SD=.76), however, their interest level was moderate (M=3.04, SD=.70).

Table 4: Format for interpreting means of SIIS, ISSES and TCSLEMP

		Description	
Level	**Range**	**ISSES**	**TCSLEMP**
1	1.01 to 1.80	Very low	Almost never perceived
2	1.81 to 2.60	Low	Seldomly perceived
3	2.61 to 3.40	Moderate	Sometimes perceived
4	3.41 to 4.20	High	Often perceived
5	4.21 to 5.00	Very high	Almost always perceived

4.2 Home Economics students perceived integrated science teachers' social learning environment management practices

Table 3 presents the means of the various sub-dimensions of the Integrated Science teachers' classroom social classroom learning environments as perceived by the Home Economics students. To interpret the observed means, the format shown in Table 2 was once again applied.

Table 3: Home Economics students' perception of teachers' classroom social learning environment management practices (N=513)

Classroom social learning environment	Mean	Std. Deviation
Students' cohesiveness	3.60	.72
Cooperation	3.55	.67
Equity	3.54	.87
Involvement	3.05	.70
Teacher Support	2.66	.85
Differentiation	2.64	.75
Classroom social learning environment	3.17	.76
Valid N (listwise)		

It was seen that the students perceived more of cohesiveness (M=3.60, SD=.72); cooperation (M=3.55, SD=.67) and equity (M=3.54, SD=.87) practices. Involvement (M=3.05, SD=.70); Teacher Support (M=2.66; SD=2.66) and Differentiation (M=2.64, SD=.75) were sometimes perceived. Based on this format (Table 4) it is seen that cohesiveness, cooperation and equity are often perceived by the Home Economics students in the Integrated Science classroom, whereas involvement, teacher support and differentiation are sometimes observed. The overall classroom social learning environment was therefore moderately perceived (M=3.2, SD=.8).

To answer research question three on the combined effect of Home Economics students' self-efficacy and perception of the teachers' management of the social learning environment on their interest in Integrated Science, first the relationship between the independent variables of students' self-efficacy and perception of the teachers management of the social learning environment and students' interest in Integrated Science were first investigated using Pearson's moment coefficient and the result displayed in Table 5. This was followed by a linear regression analysis (Table 6) to ascertain the combined effect of the independent variables (CSLE and academic self-efficacy) on dependent variable (Students' interest in Integrated Science, SIIS).

Table 5: Correlation between Biology Academic Self Efficacy, Classroom Social Learning Environment and Home Economics students' interest in Integrated Science

		SIIS
Classroom Social Learning Environment (CSLE)	Pearson Correlation	.302**
	Sig. (2-tailed)	.000
	N	513
Biology Academic Self Efficacy (ASE)	Pearson Correlation	.647**
	Sig. (2-tailed)	.000
	N	513

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

The results from Table five indicates a strong correlation (r=.65) between Home Economics students' self-efficacy and interest in Integrated Science and a moderate correlation (r=.30) between perceived classroom social learning environment and students' interest in Integrated Science (Cohen, 1988).

Table 6: Combined effect of students' perception of teachers' classroom social management practices and self-efficacy on students' interest in Integrated Science (N=513).

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	.297	.194		1.535	.125
Self-efficacy	.554	.031	.609	17.832	.000
Classroom social learning environment	.256	.057	.152	4.461	.000

a. Dependent Variable: SIIS

Also, the regression analysis shows that both self-efficacy (p<.0001) and classroom social learning environment (P<.0001) are significant predictors of Home economics students' interest in Integrated Science. In addition, the Anova Table r=.664; F=200.572, p=.000; (512, 2). The unstandardised coefficient for self-efficacy was .554/.609 and that of classroom management practices was .256/.152. This shows that self-efficacy was a better predictor of Home Economics students' interest in Integrated Science as it independently accounted for 61% of the the total variance in students' interest in Integrated Science whereas CSLE accounted for 15.2%. collectively, the model was able to explain 66.4% of the total students' interest in Integrated science.

4.3 Discussion

The results that students' self-efficacy levels are high (M=3.4, SD=.76) is an indication that Home Economics students are more confident in their achievements, performance and competencies in studying Integrated Science (Juan, et al., 2018; Bandura, 1997). Though this may be a surprising observation since contrarily, the Home Economics students, who are mostly girls, are often tagged to have phobia for Science-related subjects which are usually considered a field for boys (Stoet & Geary, 2018; Sanstad, 2018; Hussenius, 2014). On the other hand, their interest levels in Integrated Science were found to be moderate (but not low) (M=3.1, SD=.7). We therefore posit that the students' high self-efficacy levels have not been translated into higher interest levels in Integrated Science. Also, though the interest level was moderate, it is still contrary to the popular opinion among teachers that Home Economics students have lower interest in Integrated Science. This, though may be due to a number of factors, however, the role of the teachers' management of the social learning environment may provide an insight into the observed phenomenon.

The results also showed that the students perceived the management of their social learning environment by

the Integrated Science teachers very moderately (M=3.2, SD=.8). For instance, practices such as cohesiveness, cooperation and equity were often perceived whereas involvement, differentiation and teacher support practices were sometimes or moderately perceived. This implies that the Integrated science teachers often provide opportunities that enable the students to collaborate on assigned tasks, share resources, and often get to interact as they support each other during the classroom discourse (Morgan and Aboagye, 2022). However, the extent of teacher support was lower compared with the support they receive from peers. We argue that the moderate support received from teachers is translated into the moderate interest observed among the students studied. As majority of the students are female and since female students thrive more on such atmosphere of support, this could have affected their level of interest. Also, differentiation, happened to be the least perceived practice of the Integrated Science teachers which could also lower the interest levels of the students surveyed. The students may want to be treated in respect of the individual peculiar characteristics with respect to modes of learning instead of being treated as one unit. This also has the propensity to decrease the interest levels of those whose peculiar characteristics are not taken into consideration in the classroom daily discourse.

Finally, the results indicated that both self-efficacy and classroom social learning environment are positively associated with students' interest in Integrated Science, and their combined influence could raise students' interest. This stance is evidenced by the results that collectively both predictors accounted for 66.4% of the total explained variance in students' interest in Integrated Science.

5. Conclusions

From the findings of this study, a number of conclusions can be drawn. Firstly, in general, the students' perceived some CMPs more common than others. Classroom management practices such as student differentiation, students' involvement, and teacher support, were sometimes observed whereas students' cohesion, equity and students' cooperation were often observed. The most frequent classroom management practices used by Integrated Science teachers were student cohesion, equity and cooperation. Teacher support, involvement, and differentiation were sometimes used. Despite the fact that, globally, emphasis has been made on differentiated instruction, student differentiation was only sometimes employed in the science classrooms. Secondly, the combination of proper management of the social learning environment and employment of relevant strategies to enhance students' Integrated Science self-efficacy could lead to an Improvement in students' interest in Integrated Science. Finally, Integrated science teachers' proper management of the social learning environment could help to improve students' learning.

5.1 Suggestions

Based on the findings enumerated, we therefore recommend that in order to raise students' interest levels in Integrated Science and improve students' learning:

1. Teachers should manage their class in line with students' characteristics and needs. Teachers should sometimes deal separately with forward-backward, easy or hard learning and able or physically challenged students.
2. Senior High school Integrated Science teachers should consciously take steps to Involve their students in classroom daily discourse, and employ differentiated Instructional strategies.
3. Teachers should employ management practices strategically targeted at enhancing students Integrated Science self-efficacy beliefs.

5.1.1 Suggestions for Future Studies

We also suggest that future studies should consider replicating this study in other districts and regions of Ghana and consider relating the variables of classroom social learning environment such as student differentiation on students' academic achievements.

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