

PEDAGOGICAL COMPETENCE OF TEACHERS AND STUDENTS ACADEMIC ACHIEVEMENT IN JUNIOR HIGH SCHOOLS IN ASHAIMAN, GHANA

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Received: 8 November 2020, Revised and Accepted: 21 December 2020

ABSTRACT

The study investigated the pedagogical competence of teachers and its influence on student's academic achievement. The descriptive survey research design was adopted and the census (all) sampling technique was used to sample 250 Junior High School (JHS) teachers in Ashaiman Municipality. The collected data from the close-ended questionnaire was analysed with mean and standard deviation on the scale of 1-4 and the Pearson's Product Moment Correlation was used to test the hypothesis. The study revealed that as a pedagogical competence, the teachers provided appropriate feedback, adapted to changing conditions, explained content to students and communicated learning goals effectively. It was also found that there was a weak positive relationship between the classroom management competence of teachers and student's academic achievement. The study, therefore, concluded that the pedagogical competence of teachers could help promote deep knowledge, understanding and expectation among students if teacher's pedagogical competencies are effective. Also, when teachers increase their knowledge and competence to manage the classroom, they could provide high expectations for student's social support, guidance and independent thought in learning. Recommendations were made to the municipal education directorate, Ghana Education Service and Ministry of Education, Ghana based on the findings.

Keywords: Pedagogical competence, Classroom management, Academic achievement.

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INTRODUCTION

Invariably, it is presumed that the quality of education is assessed through the quality of the curriculum, students, teachers, governance, financial resource and evaluation techniques as education plays a significant role in the socio-economic development of any nation. The most important among these factors is the teacher (Sultana, Yousuf, Naseer & Rehman, 2009). This explains that the quality of education largely depends on the quality of the teacher. Pedagogy is perceived as a set of activities designed (e.g. inquiry or independent thought/learning) for learners to be assisted in the internal competence of the impartation and acquisition of knowledge. Pedagogy, in other words, called teaching and learning, is outside the learner, whereas learning is an internal activity to learners, hence to ensure smooth instruction, motivation plays a vital role.

In the process of motivating teaching and learning, the instructional process becomes both behaviour and an attitude. Attitudes are not seen, but behaviours that are clearly stated during the planning and preparation processes are seen to enhance the understanding of learners (Hakim, 2015). Pedagogical processes are based on a methodical reflection of competence, using procedures derived from established bodies of knowledge curriculum areas, including methodological observation and instruction (Danielson, 2013).

Raudenbush (2009) postulated privatised idiosyncratic and shared systematic competence as forms of instruction. Idiosyncratic competence is rarely open to public inspection, while the shared systematic competence involves shared aims, shared assessment tools, shared instructional strategies, active collaboration, routine public inspection of competence and accountability to peers. Raudenbush (2009) further stated that when classroom instruction is opened, the outcome of every learner is relevant and known to every teacher or evaluator, but differences in the competence of the teacher become public knowledge and they become more inspired to perform better.

For a smooth curriculum implementation, it is relevant that teachers possess the competence of leadership and team playing as indicated by Hakim (2015) that teacher's ability to

understand and manage student's learning competence enhances their pedagogical effectiveness. Elmore (2008) supports this claim in the sense that teacher's instructional competencies unlike their characteristics are shared competence expected during the pedagogical process.

In teacher pedagogical competence inherent in teacher professional competence, the teacher's beliefs, methodology, instructional processes and attitudes are important elements for understanding and improving educational processes and student's academic achievement. In effect, teacher pedagogical competence is methodically associated with his capabilities to manage challenges in his/her daily professional life and for the general well-being, as well as shaping student's learning, motivation and achievement. Teacher pedagogical competence such as classroom management and instruction expect teachers to liaise the influence of instructional-related policies on student's learning and achievement (Danielson, 2013). This is to say that, for instance, teacher's planning and preparation for instruction have a lasting influence on student's academic achievement. As Danielson's (2013, p. 3) puts, "instructional competence, in turn, depends on what teachers bring to bear in the classroom."

Professional standards expected of the teacher for pedagogical competence, for instance, are defined and recognised within the achievement of teachers but can't be defined unambiguously (Reynolds, 1999). To that effect, the achievement of high standards demonstrates that rules and expectations have been internalised within the classroom environment for instruction. Educational standards allow learners to measure themselves against the idea of what is of value as stipulated by the Ministry of Education, Ghana (2012). Reynolds (1999) cited by Kporyi (2019) argued that once teachers terminate the appraisal of pedagogical competence but concentrate only on the achievement of pre-determined outcomes, the value of teacher achievement decreases; hence, pedagogical competence such as pedagogical knowledge is pivotal in teaching and learning (Krauss et al., 2008; Shulman, 1986). Studies have used some measures of the effects of constructivists compared with "reception/direct transmission" competence on teaching and learning to ascertain the influence

pedagogical competence has on academic achievement (Krauss et al., 2008; Abu-Hilal, 2000).

REVIEW OF THE RELATED LITERATURE

Kankam, Bordoh, Eshun, Bassaw and Andoh-Mensah (2014) revealed that teachers use the acquired content knowledge to impact their teaching to develop student's attitudes, skills, values and knowledge. Danielson (2013) revealed that good teachers have an in-depth knowledge of the curriculum, pedagogy and essential content knowledge. This means that teachers with high levels of mastery in the content are competent in questioning as an instructional procedure. Kyomuhendo and Kasule (2017) also revealed that there exists a significant relationship between tutor's content knowledge and primary teacher trainee's academic achievement. These studies, therefore, appeared to be in line with the current study methodologically, but the designs and instrumentations quite differ from the current study. It is stated that Classroom Management (CRM) is linked with discipline or control, which predicts curbing undesirable student behaviour but does not only involve responding meritoriously when problems occur in the classroom (Little & Akin-Little, 2008). Fenstermacher (2015) opined that a teacher's classroom managerial competence positively influences student's behaviour and achievement.

Guardino (2015) testified that teacher classroom management is one of the most important responsibilities of a teacher since it determines the success of the instruction. During the instructional process, efficient teachers appear to be professionals when they can manage and control the affairs of the class regardless of the achievement level of the students and the heterogeneity of the class. This notion is such that curriculum developers consider the level and achievement of students in a class before developing a curriculum. For the developed curriculum to be effectively implemented, it has been agreed that teachers should be able to develop the knowledge, values and competence necessary to understand the heterogeneity of the students. For this reason, Jones (2000) hypothesised that a good classroom seating arrangement is the easiest yet crucial competence of the teacher for classroom management (Jones, 2000).

In the NTS (2017), classroom management is an intricate task that takes time to be ensured by the teacher. That is to say, before the teaching and learning process, the classroom teacher feels overburdened and uncomfortable with the task of instructing. It is publicised that student's academic achievement did not significantly differ by instructional management style of teachers, while interactionist behaviour management classrooms were significantly on student achievement in the standardised tests of reading (Navarro, Zervas, Gesa & Sampson, 2016).

Therefore, the continuous decline in the academic achievement of Junior High School (JHS) students in Ashaiman, Ghana is worrisome as it has created the impression as though teachers are to blame for their inefficient pedagogical competence that could have helped improve the academic achievement of these students (GES-Ashaiman Education Directorate, 2018). Likewise, this can affect the country's effort in meeting the Sustainable Development Goal 4.

The persistent decline in student's academic achievement is wearing out parents and guardians of their social and capital gains are invested in their children's education. This is because when pedagogical competence is not well exhibited for effective instruction, it negatively affects academic achievement; hence, it is paramount to investigate the pedagogical competence of teachers (instruction and classroom management) that are likely to affect academic achievement (Serebour, 2013).

As such, a key indicator of quality education and school effectiveness is academic achievement (Danielson, 2013; Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009). However, student's academic achievement has become

a major concern to many stakeholders of education in Ghana and the world at large. Dinsmore & Alexander (2012) supports this claim saying that efforts made by teachers produced less or no result. For example, from 2015 to 2018, the Chief Examiner's report indicated that student's achievement was just slightly above average; hence, teachers should treat all topics in the syllabus, guide students to write their answers in meaningful sentences and teachers should be allowed to update their knowledge concurrently.

The Ashaiman Municipality recorded a decline in student achievement from 2013/2014 to 2016/2017 academic year with less than 40% of the BECE candidates obtaining grades 1 to 6 (Ashaiman Municipal Assembly, 2018). Only 74% out of the 1,856 candidates obtained grades 1 to 6 in the 2017 BECE. One is tempted to question if teacher pedagogical and classroom management competencies directly/indirectly affect the inconsistency in the results. Several studies have attempted to testify to this question both locally and globally (Kankam et al., 2014; Olfos, Goldrine & Estrella, 2014; Dinsmore & Alexander 2012; Van Driel & Berry 2012; Asimeng-Boahene, 2004). Based on the, it is prudent and imperative to investigate the pedagogical competence of teachers with attention to the aspects of teacher factors that contribute most to academic achievement.

SIGNIFICANCE OF THE STUDY

- The findings of this study are useful to educationists, especially curriculum developers and teachers, to adopt appropriate teaching and learning strategies to promote competently and effective instructional coherence.
- The findings and recommendations of this study will also serve as a source of reference material to students and teachers to acquire new knowledge to function well as professionals and productive members of their profession.
- The study will help educationists and curriculum developers to implement appropriate policies and strategies to enhance teacher's adherence to the National Teacher's Standard, Ghana in teaching at the colleges of education and teacher education institutions in Ghana. This will be achieved by the current study filling the 'missing-link' between teacher's pedagogical competence and student's academic achievement.
- It will also be relevant to the Ministry of Education, Ghana, the Ghana education service and other stakeholders concerned with the implementation of the curricula at the JHS to adopt appropriate strategies that will equip and motivate teachers to teach effectively as professionals.
- It will again equip the municipality education directorate of the Greater Accra Region, Ghana to adopt strategies that will enhance teacher-student efficiency and to ensure teacher pedagogical competence.

OBJECTIVES

The objective of this study was to investigate the pedagogical competence of teachers (instruction and classroom management) and how it influences JHS student's academic achievement in the Ashaiman Municipality, Ghana.

RESEARCH QUESTION

What is pedagogical competence employed by JHS teachers in the Ashaiman Municipality during the instructional process?

HYPOTHESIS

Hypothesis: There is no statistically significant relationship between teacher's competence in classroom management and student's academic achievement.

METHODOLOGY

The study adopted the descriptive survey research design to establish the relationship between the pedagogical competence of teachers and student's academic achievement. This was based on the assertion by Cohen, Manion and Morrison (2007) that the descriptive design entitles researchers to analyse research questions and to test hypotheses; hence, the choice of this design since teacher pedagogical competence can best be ascertained through self-reporting instrument (questionnaire: TPCQ). A sample of 250 was randomly (lottery technique) selected from the population of 1200 JHS teachers in Ashaiman Municipality, Ghana. Data was gathered with the Teacher Pedagogical Competence Questionnaire (TPCQ) developed from the Teacher Evaluation Instrument (TEI, 2013) and was structured on a four-point Likert scale ranging from unsatisfactory to distinguish. For reliability of the TPCQ, a Cronbach's Alpha Coefficient reliability estimate 0.71 was recorded from the pilot test. As per the recommendation of Cohen et al. (2007), is a reliable instrument; hence, the actual data was collected. The research question was analysed with mean and standard deviation based on the standard/set mean of (M=2.50) and Pearson Product Moment Correlation was used to test the hypothesis after all preliminary statistics like normality were performed.

RESULTS AND DISCUSSION

Research Question: What pedagogical competence is employed by JHS in the Ashaiman Municipality during the instructional process? To answer this research question on the instructional competence of the teachers, the responses of the respondents were ranked on a scale of 1-4 based on the standard/set mean (M=2.50).

The responses show that to a large extent, the teachers demonstrated high competencies during the instructional process; hence their response was regarded as "proficient" and/or "distinguished," which is synonymous to agree and strongly agree. This suggests that the responses were homogenous because the mean of the SD is less than 1 (SD=0.77). The result shows that (M=3.26, SD=0.75) during the instructional process, the teachers communicate learning goals or expectations to all students in the classroom. This suggests that during teaching and learning processes, most teachers communicate expected instructional outcomes to students. Again, the result reveals that the teachers (M=3.10, SD=0.81) communicate learning directions and procedures to all students. This means that they influence the instructional process by communicating learning instructions and processes to all students during the instructional hour.

Table 1: Teacher pedagogical competence during the instructional process

Item	N	Mean	SD
I communicate learning goals or expectation to all students in the classroom	250	3.26	0.75
I communicate learning directions and procedures to all students	250	3.10	0.81
I explain subject matter (content) to all students during the instructional period	250	3.29	0.77
I use higher-order questioning techniques that ensure high levels of student participation in the classroom	250	3.19	0.79
I use questioning skills with multiple correct answers during the teaching and learning processes	250	3.09	0.86
I use discussion techniques that ensure high levels of student participation in-class activities	250	3.05	0.82
I engage all students in learning with activities and assignment that permit critical thinking	250	3.17	0.77
I engage students in problem-solving in groups in the classroom	250	3.13	0.71
I engage students in learning with instructional materials and resources and activities that make subject matter meaningful	250	3.17	0.76
I use assessment principles and assessment results to guide my teaching and student's learning	250	3.06	0.75
I provide constructive assessment feedback to students in the classroom	250	3.13	0.76
During the teaching period, I provide students with self-assessment and monitor the process	250	3.17	0.78
I pose questions to provide evidence to adjust my lessons to fit student characteristics in the classroom	250	3.19	0.78
During the teaching period, I objectively response to student's questions	250	3.30	0.70
I adapt to changing conditions to improve student learning in the classroom	250	3.30	0.81
Total		3.18	0.77

Source: Field survey (2020)

The result further shows that the teachers explained the subject matter (content) to all students effectively (M=3.29, SD=0.77). The responses indicate that proficiently or to distinguish extent, the teachers explain the content of the subject to the understanding of students. Table 1 again shows that (M=3.19, SD=0.79) of the teachers revealed that during the instructional period, they use higher-order questioning techniques that ensure high levels of student participation in the classroom which means, the teachers ensure that their teaching strategies hover around inquiry and critical thinking on the part of students for attaining efficient instructional outcomes. The result presented in table 1 is an indication that as a component of the instructional process (M=3.09, SD=0.86) of teachers use questioning skills with multiple correct answers during teaching and learning processes. Again, (M=3.05, SD=0.82) teachers indicated that they use discussion techniques that ensure high levels of student participation in class activities while (M=3.05, SD=0.87) also revealed that they engage all students in learning with activities and assignment that permit critical thinking. The responses show that most of the teachers adopt different instructional strategies for effective teaching and learning and enhancing student's understanding and behavioural change. Once more, the result in table 1 concerning the teacher's engagement with teachers reveals that (M=3.17, SD=0.77) of

the teachers engage all students in learning with activities and assignments that permit critical thinking during the instructional period. The result shows that the average teacher's competence encompasses student engagement in using activities and assignments to stimulate student's thinking abilities. Also, the result in table 1 shows that (M=3.13, SD=0.71) of the teachers engage students in problem-solving through group works in the classroom. This suggests that teachers involve students in inquiry and group activities as a teaching strategy for effective instructional processes. The teachers further indicated (M=3.17, SD=0.76) that during the instructional hours, they engage students in learning with instructional materials, resources and activities that make subject matter meaningful for effective teaching and learning. On the item of the teacher's competence in the use of assessment principles and assessment results to guide teaching and student's learning, the result in Table 1 shows that (M=3.06, SD=0.75) responses were favourable. The responses further indicate that to a smaller extent (M=3.06), teachers provide guidelines to assess and communicate assessment results to learners, which help guide their teaching and student's learning. Again, (M=3.13, SD=0.76) of teachers agreed that to ensure effective instructional competence, they provide constructive assessment feedback to students in the classroom. Provision of constructive assessment outcomes to students

during the instructional process according to the teachers promoted effective teaching and learning. To them, they effectively respond positively to student's scores from their summative and/or formative assessment results.

Table 1 also shows that ($M=3.17$, $SD=0.78$) teachers provide students with self-assessment and monitor the process. The responses indicate that teachers empower students to self-assess their achievement and involve themselves in the process of assessment during the instructional process. Furthermore, that ($M=3.19$, $SD=0.78$) of the teachers pose questions to provide evidence to adjust their lessons to fit student characteristics in the classroom. This is an indication that the teachers use the question-and-answer teaching method as a form of assessing the progress of the learning pace and progress of the students, thereby adjusting the lesson to meet the learning characteristics of the students if needed. Table 1 shows that ($M=3.30$, $SD=0.70$) teacher's respond to student's questions objectively during the instructional process. This means, quick and objective responses to questions posed by students during the instructional process ensure effective teaching and learning as indicated by the result of the teachers ($M=3.30$) while the teachers adapt to changing conditions to improve student learning in the classroom ($M=3.30$, $SD=0.81$). The responses on the dynamism of the teachers reveal that the teachers do not confine the instructional process to rigid processes but flexible to allow changes based on the environmental conditions surrounding the teaching environment ($M=3.17$, $SD=0.77$). The result based on the instructional competence of the teachers reveals that the respondents objectively responded to student's questions,

adapt to changing conditions to improve student learning in the classroom, explain the subject matter to students and communicating learning goals to all students. It is therefore concluded that teachers in the Ashaiman Municipality demonstrate instructional communication skills and provide appropriate feedback to students based on their developmental and cognitive capabilities during the instructional process.

The findings of the study are in line with Kankam et al. (2014) whose study revealed that teachers possess the requisite content knowledge to impact knowledge, skills and attitudes in students. The study indicated that teacher instructional competence has a bearing on student's academic achievement; it corroborates with Stemmer, Brown and Smith (1992) that teachers with higher mastery promote effective instructional proceedings.

However, a slight difference in the study of Stemmer et al. (1992) and the current study is that the latter focused on instructional competence as a pedagogical competence while the former focused on content knowledge as a subset of instructional competence. This agrees with Danielson (2013), who's postulated that teachers have in-depth knowledge concerning the curriculum, pedagogy and essential knowledge regarding teaching and learning. Likewise, teachers in the Ashaiman Municipality possess absolute competent knowledge in communicating assessment feedback to students during teaching and learning activities. Communication, assessment and knowledge of developmental psychology are necessary for improving teacher understanding and demonstration of effective instruction towards student's academic well-being.

Table 2: Test of normality among the variables

Variable	Kolmogorov Smirnov ^a		Shapiro-Wilk		SK	K
	Statistic	Significance	Statistic	Significance		
Classroom management	0.11	0.00	0.92	0.00	-1.13	1.72
Academic achievement	0.08	0.05	0.99	0.29	-0.15	-0.53

^a- Lilliefors significance correction, SK=Skewness, K=Kurtosis

Normality test

Normality test using Kolmogorov-Smirnov, Shapiro-Wilk, and Skewness and Kurtosis. Concerning academic achievement, the result shows that the data was not normally distributed with skewness of -0.150 and kurtosis of -0.53. The Shapiro-Wilk test of .29 also indicates that the data was not normally distributed. The dependent variables were not normally distributed; however, parametric tests were used because they are robust. Even when the normality assumption is violated, parametric tests make allowance to be used because they are robust in the presence of violations of normality test assumption when the sample size is largely based on the central limit theorem.

Hypothesis

There is no statistically significant relationship between teacher's competence in classroom management and student's academic achievement

Table 3: Pearson's Product Moment Correlation between teacher's classroom management competence and student's academic achievement

Competence	N	Mean	Sd	r	p
Classroom management	250	56.60	9.76	0.04	0.69
Student's academic achievement	250	63.60	13.16		

Source: Field survey (2020)

The relationship between classroom management competence and academic achievement was investigated using Pearson's Product Moment Correlation Coefficient. Preliminary analysis performed indicates that the assumptions of normality, linearity and homogeneity were not violated; hence, the test

statistics of Pearson's was used. There was no statistically significant relationship between teacher's classroom management competence and student's academic achievement ($r=0.036$, $n=250$, $p=0.69$, 2-tailed) and a relatively weak ($r=.04$ variance between the two variables. More so, the result revealed that there was 12.96% shared variance between teacher's classroom management and student's academic achievement; hence, there was comparatively weak shared variance as suggested by Pallant (2010) between teacher's competence in classroom management and the academic achievement of students. Pallant (2010) opined $r=0.10$ to 0.29 or $r=-0.10$ to -0.29 as weak relationship.

The result, therefore, reveals that though there is a relationship between the two variables, JHS teachers in the Ashaiman Municipality's competence in classroom management appears to have contributed significantly lesser to the academic achievement of students. The result shows that as the classroom competence of teachers increase, student's academic achievement increases and vis-a-vis. The study, therefore, rejects the null hypothesis, which states that "there is no statistically significant relationship between teacher's competence in classroom management and JHS student's academic achievement.

The result agrees with the findings of Raudenbush (2009) and Kyomuhendo et al. (2017). Raudenbush (2009), for instance, revealed that the competence of a teacher to open the outcome of every learner is a prerequisite for an increment in student's academic achievement. Raudenbush (2009) compared with the result of the current study depends to a large extent on teacher's competence in communicating with students, using questioning and discussion techniques, engaging students in learning, using assessment in instruction, demonstrating flexibility and responsiveness etc. to effectively promote a

behavioural change in learners. Olfos et al. (2014) also agreed in the sense that there is a strong relationship between the classroom management competence of teachers, instruction and student's academic achievement. It is concluded there is a weak relationship between teacher's competence in classroom management and the academic achievement of JHS students.

Key findings

- The study found out that teachers provided appropriate feedback, adapted to changing conditions, explained content to students and communicated learning goals.
- It was also revealed that there is a weak positive relationship between classroom management competence of teachers and student's academic achievement.

CONCLUSIONS

- The knowledge and skills of teachers in classroom management as a pedagogical competence could help teachers effectively use instructional time to meaningfully engage students during the teaching and learning process. This could in turn, improve student's academic achievement.
- When teachers increase their knowledge and ability to manage their classroom (learning environment), they could provide high expectations for student's social supports, direction and self-control. These could positively increase the student's academic achievement.

Recommendations

- GES and National Council for Curriculum and Assessment should organise intensive Continuous Professional Development programmes to help teachers to sustain and intensify their skills and efficiency in instructional communication.
- Teachers should constantly meet to discuss issues (faculty knowledge) among themselves to upgrade their knowledge towards effective classroom control and management that would promote effective instructions

ACKNOWLEDGEMENT

Nil

AUTHORS CONTRIBUTIONS

Both the authors have contributed equally.

CONFLICT OF INTEREST

Declared none.

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