



Perceived impact of lesson observation practice on the teachers and learners: A case study of mathematics teachers of Chingola district

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Abstract

The study investigated the perceived impact of lesson observations on learners' engagement and academic performance and effects on teachers' professional growth and mentorship. Two research questions guided the study *viz*: what is the perceived impact of lesson observation practice on learners' engagement and academic performance? What are the perceived effects of lesson observation on teachers' mentorship and professional growth? A mixed methods research design was employed in the study. A sample of thirty (30) teachers and 12 learners were picked for the study. Data were collected via a questionnaire, focus group discussions and interviews. Nvivo and Descriptive statistics were the tools used for data analysis. The Major finding was that teachers held positive views on learners' engagement and teacher mentorship. Based on this, the study recommended that schools and stake holders should enhance teacher collaboration in lesson study cycles in Mathematics and hold regular, structured professional development sessions.

Keywords: Perceived impact, lesson observation, teachers, learners

Introduction

In countries all over the world, the most common method for evaluating the effectiveness of the performance of a teacher are to improve teacher performance, thus leading to increased student outcomes, in the use of lesson observations (OECD, 2009). Lesson observation serves a range of functions in different educational settings around the world, for example, as a means of supporting teachers' initial education or ongoing professional learning (O'Sullivan, 2006^[18]; Cajkler *et al.*, 2013^[4]; Wood *et al.*, 2019; monitoring for compliance and accountability purposes (O'Leary, 2016)^[16]; evaluating the impact of policies or interventions on classroom practice (Matsumura *et al.*, 2008)^[14]. The use of lesson observation has demonstrated its value for producing lively exchanges of ideas about teaching and learning among the teachers in the department (Alvine, Judson, Schein, & Yoshida, 2007)^[1].

For all teachers, it provides opportunities to build professional learning communities, to learn from one another and to think deeply about content and the way learners learn, (Dubin, 2010)^[6]. Further, lesson observation has a longstanding tradition in the assessment and development of new and experienced teachers as in the case of England, and over the last two decades it has progressively emerged as an important tool for measuring and improving professional practice in schools and colleges, (O'Leary 2012)^[17]. For instance, in sub-Saharan Africa, there are long traditions of using observation as a means of assessing the quality of education provision. Within civil service structures, district supervisors and others in positions of leadership have used observation protocols and checklists to assess classroom environments and monitor teachers' compliance with policy directives, for example, in terms of teaching methods, Curriculum coverage, equipment, dress and other aspects of conduct (Anderson Levitt & Diallo, 2003^[1]; De Grauwe, 2001^[5]; Mitchell, 2019a).

During lesson observations, there is an interactive process that takes place between individuals with different levels of expertise and experience in order to give support to each other and to become more efficient in the work through mentorship, (IJCRSEE, 2018). Besides mentoring teachers as the foundation on which the edifice of education stands and the conceptualisations of mentoring are often not just multifarious but also often insufficiently distinct from related concepts such as coaching or training. The research demonstrates the extremely important role of lesson observation in the periods of change, which requires different thinking and approaches in education. Mentoring, through lesson observation is particularly helpful for the professional development in the organizations where human relationships, support and learning have the central role for organizational growth. Undoubtedly, schools are organizations of this kind. As stated by Hargreaves and Fullan (2000), mentoring has enormous but not fully used potential to support continuous school change. Schools that have mentoring programs have a strong effect on novice teachers, primarily in the areas of teacher retention, classroom instructional practices, and student achievement (Ingersoll & Strong, 2011)^[11]. One of the successful ways to enhance collaboration and to improve teachers' competences is school-based mentoring (Wang & Odell, 2002^[23]; Tillman, 2005)^[21]. The idea of learning together and school-based mentoring is rooted in Vigotsky's (2002) socio-cultural approach to human development. Vigotsky (2002) determined that we learn better when we are involved in a dialogue with those who challenge our present knowledge and structure our future learning. When teachers work together, there are more consistencies within schools, with a resultant positive effect on school climate, student engagement, and student learning. Teachers feel confident and are more likely to remain in their chosen profession when they have the support of fellow teachers and work with them closely, collaboratively and as valued team members (Vesely *et al.*, 2013).

There are a lot of benefits of teacher mentoring and one of the major benefits of mentoring is improving professional competence. Besides that, mentoring to the novice teachers motivates them to value their profession as well as reboots their self-confidence as teachers, (HM Inspectorate, 2008). If implemented well, mentoring programs may not only increase job satisfaction and help teachers to emerge as leaders within their schools, but also have a positive effect on student achievement and engagement. When teachers work collaboratively with each other as valued team members; and schools are able to implement mentoring programs effectively, the sharing of knowledge between teachers becomes an inherent quality whereby learners, teachers, and the school climate all benefits, (Brown, 2024) [3].

Many countries in the Sub-Saharan Africa, Zambia inclusive grapple with the acute shortages of qualified teachers for their rapidly expanding education sector. One proven approach to enhancing teacher professional development is in-service teacher mentorship and support that involves building capacity of the experienced teachers to provide to other teachers through the school based CPD programmes such as lesson study. In the lesson study, the observation activity focusing on pupil learning and other related evidence is the key point of the lesson study (Lewis & Hurd, 2011; Wood *et al.*, 2020) [25]. Together the teachers plan lessons and activities, observe each other and evaluate together to enable improvement; the emphasis is on improving the students' learning rather than how the teaching impacts on the learning (O'Leary, 2016) [16]. However, Seleznyov (2018) [20] highlighted among other gaps the limited understanding of the impact of lesson observation on teacher development, particularly in terms of how it affects teaching practices and student outcomes. This study examines the perceived impact of lesson observation practice on learners' engagement and academic performance and its effects on teachers' professional growth and mentorship.

The study was guided by two research questions;

1. What is the perceived impact of lesson observation practice on learners' engagement and academic performance in senior secondary school mathematics in Chingola District?
2. What is the perceived effects of lesson observation on teachers' professional growth and mentorship in Chingola District?

Methodology

The research design used in this study was the mixed method design. The study was carried out in Chingola District. Two research questions were raised for the study. Purposive sampling in the selection of the six government secondary schools was used as they were the schools which were implementing lesson study cycle. Thirty (30) teachers were selected using the total sampling sample size so that all members under each department were captured. The twelve (12) learners in the study were selected using purposive sampling through their performance and fluency in the language of instruction which was English. Questionnaires, Focus Group Discussions and interviews were employed for data collection. While descriptive statistics and Nvivo were employed for data analysis.

Findings and discussion

This study explored the impact of lesson observation practice on the learners and the teachers. For many teachers, becoming a better teacher meant enhancing student learning outcomes because teachers judge their effectiveness in terms of learner achievement (Guskey, 2002) [9]. The first issue sort was assessing the perceived impact of lesson observation practice on learners' engagement and academic performance. Data analysed established that lesson observation practice had positively impacted the learners. It was revealed that pupil participation was high during lesson observation, implying that there was more engagement in learning than before. Not only that, it was observed that learners also learnt new methods of solving problems and new skills than before. Below is the excerpt from FGD (teachers) from school B had this to say;

FGD B: "Pupils always learn something new such as the methods and skills. Most times it motivates them to highly participate during the lesson and it's a boost which resulted into more participation. In most cases it affects them positively"

From the excerpt, it was revealed that the learners who highly participated in the lessons found enjoyment in learning with teachers in the class while observing the lesson. This was attributed to boost of morale in the class than usual. The study also revealed that teachers used simple ways and easy methods of solving questions. This can be confirmed from the excerpt (from the pupils) below which was recorded from School A;

Learners A: "We enjoyed the lesson and the explanation from the teacher was better than usual. He displayed simple and easy methods which helped us grasp the concept"

The excerpt above, confirms the revelations on the use of simple methods from the teachers which derived enjoyment from the learners. The study also revealed that learners learnt new skills and boosted their confidence in answering questions in the presence of the other teachers. Similarly, learners from school B revealed that there were more benefits to lesson observation in that they paid more attention to the lesson than usual and were more focused. The study revealed that learners benefited in the simplicity of methods used when solving questions from the knowledge and skills acquired during lesson observations. The excerpt below was from FGD C:

FGD C: "We had a demo-lesson on how to calculate the volume of a frustum where an easier method and a simple one was used and it benefited both the learners and the teacher. Even pupils said the formula was the best."

The above expression from the teachers was supported by the responses of the learners from school C, as noted from the excerpt below;

Learner C: "these lesson observations benefit us a lot as pupils because teachers use simplified methods when teaching. We would want to learn like this all the time."

The study found that during lesson observations, learner participation, attention, motivation and concentration was higher than before. It also revealed that the interaction with the teacher during lesson observation was good as they were free to ask questions which was not possible with their own teacher. The learners had this to say;

"there was a lot of participation from us the pupils and we raised our hands to answer as never before. We would prefer to learn in this manner because we controlled

ourselves; they were no silly comments during the lesson and we paid more attention''

According to Wong (2009) ^[24], the raising of hands from the pupils encourages them to participate and helps in maintaining a respectful environment. He also argued that, giving attention and feedback to learners increases engagement and motivation to learners. He also further stated that when learners avoid the passing of silly comments, it helps in minimising disruptions and promotes a positive classroom environment.

However, the study also established that lesson observation practice had some negative impact on the learners as some were not able to freely express themselves during the lesson. The study revealed that some learners felt intimidated with the presence of the teachers as a result they shunned away from participating in the lesson. Unfortunately what was observed during the study on the disturbances was a cross cut to all the school under study. There were a lot of disturbances caused by the observers (teachers) themselves. The use of phones during the observations was quite disturbing not only that even the ringtones were worse off. It was disturbing even to both the learners and the presenter. Besides that, the movements to and fro class by teachers disturbed the tempo of the lesson. Some teachers came late for lesson observation as they attended to their classes' first citing loss of time for coverage of the syllabus at the expense of the lesson observations. No wonder, Lewis and Hurd (2011) ^[12, 13] outlined a five procedure for observing a research lesson and among these are: respect the classroom atmosphere (silent phone, avoid side conversations, and arrive on time and stay for the entire classroom and avoid assisting learners or interfering with natural flow of the lesson. This was all meant as not to disturb the flow of the lesson and critically to concentrate on the observation of the lesson.

It was observed from the study that although lesson observations had some negative impact on the learners, the positives outweighed the negatives.

The second issue was the perceived effects of lesson observation on teachers' professional growth and mentorship. The study established that the lesson observation practice (LOP) had a positive effect on the mentorship of teachers. In fact, teachers who had opportunities to mentor other teachers emerged as leaders within their professions, thus developing learning organizations and improving their own credibility with their colleagues (HM Inspectorate of Education, 2008). These were the teachers seen continuously developing their own careers (Portner, 2008). Through mentoring, they had acquired levels of ownership and responsibilities in the programming that took place within schools. Mentoring relationships benefit entire schools (Hobson, Ashby, Malderez, & Tomlinson 2009), because they are a form of professional development that directly affects the school in which they are taking place. Often, this professional development continues long after the year of mentorship concludes, it fosters enriched feelings for both the mentor and the new teacher.

The study revealed an improvement in lesson planning and delivery than before. One of the HODs from School A, stated that those teachers who regularly attended the lesson observation had greatly improved in lesson preparation. The study also found that teachers acquired new skills and methods for the perceived difficulty topics like computer,

linear programming among others. Below is the excerpt from the HOD A;

HOD A: ``teachers learn a lot and this is noticed in the way they plan and teach. Teachers learn practical ways of lesson delivery away from the theories learnt at college or universities.''

This confirms the findings from a study done by Lingambe, kasonde & Nakai (2014) that while evaluations found that the Lesson Study practice improved teachers' lesson planning and students' performance on exams, teachers' understanding and delivery of learner-centered pedagogy was still relatively superficial as teachers had continued to grapple with the quality of delivering learner-centered lessons. It was observed that in all the schools under study, all the teachers used teacher centred methods of teaching. None of the lessons observed could be described as using a problem-solving or inquiry-discovery method as was advocated from Implementation Guidelines Book (MOE & JICA, 2010). However, the use of teacher- centered method was partly due to large classes which hindered to effectively use participatory methods that were mostly advocated for the CPD programmes. What was observed was that in all schools except one school the number of learners was at least 100 in the classes where observations were conducted. This made teachers' movements within the class a challenge as they were restricted to the chalkboard. Such a situation was beyond the teachers as it all rested on the government ensuring that it recruited more teachers to reduce the learner to teacher ratio.

The study also found that professional interaction during lesson observation process had impacted positively on the teachers in the sense that they developed self- confidence (efficacy) when teaching their classes. Below is an excerpt from one of the Heads of Department;

HODE: `` I had one teacher who had challenges in teaching senior grades but after these lesson observations, she is now more than able to prepare and deliver lessons to senior classes. Having a degree is different from actual teaching, so lesson observation is an avenue for mentorship of the teachers.''

Thus, mentoring promoted peer collaboration through observing, motivating and providing suggestions on each other's teaching styles, instructions and strategies, (Brown, 2024). It also promoted collaboration within schools; Gilles *et al.* (2009) ^[8] stated that teacher development occurs while beginning teachers actively contribute to the learning. Mentoring also helps teachers to be critically reflective about their own beliefs about teaching, learning and learners. It was this reflective practice through mentoring that provided an opportunity for both the experienced and novice teachers. Yadav (2018) states that mentoring gives the teacher psychological and emotional support to adjust and develop professionally, which in turn may help in learners' progress. So, constant mentoring gives the mentors a greater sense of confidence and self-significance in their teaching career. The report from MOE & UNICEF (2024) also confirmed that lesson observations helped in building teacher confidence and competency in the delivery of the lessons. This was the case as the misconceptions within the teachers were cleared before they attended to their classes. What was also revealed was that LOP had greatly helped to capacity build both the NQT and the old teachers. The excerpt below was from one of the HODs from school E;

HOD E: " I had one teacher who had challenges in teaching senior grades but after these lesson observations, she is now more than able to prepare and deliver lessons to senior classes. Having a degree is different from actual teaching, so lesson observation is an avenue for mentorship of the teachers."

The study also revealed that there was a lot of mentoring which took place during lesson observations whether NQT or old one. The HOD himself from school F had the excerpt below;

HOD F: "like today (during observation) I learnt something new on the slash as forward slash. I never knew that before, so it is capacity building each other. Learning such brings confidence as you teach your classes."

This capacity building was also for the good of the old teachers who also needed to update themselves with the new topics which were included in the 2013 Curriculum such as computer among others. The Zambian Country Report (2022) perceived mentoring as an effective development process for the Newly Qualified Teachers (NQTs) but it is equally effective for experienced teachers who need to further improve their content knowledge pedagogical and classroom management skills (Ganser, 1996) ^[7]. It can be noted from the findings that both the NQT and the experienced ones benefited from the observations as a form of mentoring programme.

The study also found that the skills, approaches, methods among others which teachers acquired during lesson observations improved the quality of teaching among themselves. Teachers improved on their lesson planning and were also able to handle perceived difficult topics with confidence hence improving the quality of teaching and learning. The excerpt below was from one of the teachers;

FGD C: "We had a demo-lesson on how to calculate the volume of a frustum where an easier method and a simple one was applied and it benefited both the learners and the teacher. Even pupils said the formula was the best."

The findings from the report from MOE & UNICEF (2024), the report revealed that during the lesson observations, teachers learnt the importance of preparations, how to prepare for teaching and, how to handle learners and difficult lessons which in turn improved learner performance. During planning meetings it was revealed that teachers discussed the best approaches and teaching aids to be utilised which enhanced the quality of teaching and learning. The focus was always on the lesson and how best it could benefit the learners. Lewis and Hurd (2011) ^[12, 13] and Wood *et al* (2020) ^[25] stated that observation activity focusing on learner learning and other related evidence was the key of the lesson study. Through this activity, teachers can continuously learn from the best practices of their colleagues and this learning can reflect in their own lessons, (Fitriati *et al.*, 2022). Thus, observation is a valuable practice for the development of teachers (Anderson. Barksdale & Hite, 2005). Moreover, it is a technique that is used in educational research and it possesses tremendous potential to advance our understanding of teaching and learning by capturing the process of instruction through the lens of teaching behavior and the students' response, which can be used to improve instruction. It is regarded as constructive criticism in order to advance and value teachers' continuous improvement, personal and professional growth (Vermunt *et al.*, 2019) ^[22].

During the post observation practice, one of the teachers attested that he had learnt an easier way of finding the equation of straight line cutting both the X and Y axes which he intended to use in his lesson for the benefit of the learners. The FGD A had the excerpt below;

FGD A: "like today I learnt a new method when teaching inequalities on linear programming for the line cutting both the x and y axes without finding the gradient. I can't wait to teach it in my classes."

Lesson observation practice was deemed as a game changer in providing quality teaching and learning because teachers learnt from each other the best ways to teach so that learners could benefit more. As teachers worked through the process of lesson observation, it provided a lot of opportunities for capacity building on their knowledge of mathematics and how to teach mathematics, (ACME 2015). The knowledge acquired within themselves was applied to the real situation which was the classroom.

Conclusion

The use of lesson observations in the lesson study in teaching and learning process cannot be over emphasised. As it can be noted from the study, lesson observations had an impact on both the learners and the teachers. The lesson observation practices in the lesson study cycle had significant potential to enhance teaching and learning in Mathematics. The study found that teachers perceived that lesson observation practices positively influenced learner engagement and academic performance. Students reported improved understanding and retention of Mathematical concepts. Further, the study established that teachers reported experiencing professional growth, particularly in lesson planning and reflective practices. Mentorship was viewed positively as more experienced teachers guided novices through lesson observations in the lesson study cycles.

Recommendation

In line with the findings of this study and the conclusions, the study recommends enhancing teacher collaboration through regular, structured professional development sessions.

By addressing these issues, stakeholders can optimize lesson observation practices to improve teaching /learning quality, learner engagement and teacher professional growth.

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