Purposive Reflection: Perspectives on Lesson Study in Bridging Pedagogical Process and Learning Outcomes

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Abstract

This is a qualitative case study about the role of lesson reflection in the context of Lesson Study in meeting desired learning outcomes. The purpose of this study was to determine how doing lesson reflection the Lesson Study way can offer meaningful insights to enrich reflection under DO 42, series of 2016. This study interviewed 13 participants who all had a minimum of one year in conducting Lesson Study. This is anchored on constructivism and variation theories. Maximum variation sampling was purposely used in choosing the interview participants. The participants were semi-structurally interviewed one-on-one via Zoom. The data were treated for purposes of coding and in search for patterns using Quirkos, a qualitative data analyzer software and were analyzed using reflexive thematic analysis by Braun and Clarke, 2019. The study revealed the following themes which highlighted answers to the role of lesson reflection through Lesson Study in meeting desired learning outcomes for subproblem 1: a) improved lesson preparations, b) improvement in lesson execution, c) student learning facility, d) teachers' professional growth; for subproblem 2: a) better lesson preparation and delivery, b) students learn by doing and make learning discoveries; for subproblem 3: reflective lesson revisions improve students' performance, b) learning is bridged particularly to slow students, c) aids students' learnability through teachers' anticipations based on observations.

Keywords: Polytechnic University of the Philippines, Lesson Study, lesson reflection, learning outcomes, variation theory, constructivism,

1. Introduction

The teaching and learning process in itself is a complex phenomenon that requires understanding beyond its basic definition in the hope of making learners get desired learning. Educators, both seasoned and neophytes alike have been in the common ground of thinking that teaching processes or the practices of transmitting knowledge to the learners are just but a simple meeting of learning objectives. And that puts the idea on transfer of learning incredibly simple but at the same time incredibly complex (Education To Save The World, 2020). Although this notion is basically true, one important element in this process of imparting knowledge to the learners is sometimes set aside so long as learning objectives are met. This is because of the very high regard afforded to learning objectives which are essential for effective learning

(O'Clair, 2017) as they define what students are expected to learn (McMillan, 2015), which are deemed student-centered and indicate what students will be able to do as a result of the teaching and learning process (Hodge, 2015). The one important element in the teaching process that is at times left wanting for attention is the acknowledgment that students are of different types (Gilakjani, 2012), thus different teaching strategies (Sarode, 2018) and approaches (Hoque, 2016) are necessary.

One way of meeting the demands of looking into the nature of learners in order for teachers to become truly effective is by scrutinizing their teaching methods and strategies, particularly by examining the outcome of their day-to-day lessons if only to be certain that meaningful teaching and learning process is met. This initiative of looking into one's teaching styles and outcome thereof is called lesson reflection. Lesson reflection allows the teacher to review what has transpired in the classroom during the actual teaching and learning process (Gutierez, 2016), and to determine whether the strategy that has been employed matches with the learning inclinations or nature of the students (Aimah et al, 2017).

The necessity of acknowledging the fact that teaching requirements should be aligned to the students' needs is imperative for the teachers or educational institutions to meet desired learning outcomes from the students. This can be done also by looking at how educators evaluate their classroom performance by looking into the strategies they use from day-to-day. Lesson reflection is one way to look at it for through lesson reflection teachers can have the chance to evaluate learning outcomes from the teaching approaches employed. Revisions of teaching approaches are made possible through lesson reflection and it is by far important not only for the school to meet desired learning outcomes but also for the teachers to practice reflective teaching.

According to Mishra et al., (2019), reflective teaching practices are inevitably vital to effective instruction. Reflection is valuable for all teachers, especially veterans who have become comfortable in their teaching styles (Young, 2021). When teachers do reflections in their lessons, they are also allowing the procedure of reflection work for them to develop professionally, hence making it a requisite for teacher to improve in their classroom practices (Pokhrel, 2021). It is also a way for the teachers to be aware of their lesson activities thereby making them reflective educators.

In the Philippines, not much has been said yet about doing lesson reflection more particularly other than it being included in the Daily Lesson Plan (DLP) or Daily Lesson Log (DLL) in the public schools. And apart from this lesson plan requirement, teachers face challenges in the Philippine education system in terms of actualizing reflective teaching (Nino, 2018) but despite this, reflective practice allows teaching to cultivate ideas and various strategies and methods to meet the demands of student learning (Nanquil, 2020). In addition, reflective practices enable the teachers to become practitioners who are able to use their reflections to gain understanding of their instructional practices (Gutierez, 2015).

DepEd Order No.42, s.2016 which is about the Policy Guidelines on Daily Lesson Preparation for the K to12 Basic Education Program cites the inclusion of lesson reflection in the teachers' lesson plans. Those who are newly-hired are required to fill out the reflection portion right after

the delivery of the lesson in their DLP and in like manner those teachers who have been teaching for at least one year are required to fill out the reflection portion in their DLL. The inclusion of the reflection portion in the teacher's lesson plans in both DLL and DLP indicate the need for the teachers to be reflective in their day-to-day lesson delivery for purposes of improving the teaching and learning process. The following item is taken from the said order:

> 55. Reflection. This part of the DLP should be filled-out right after delivery of the lesson. Teachers are encouraged to think about their lessons particularly the parts that went well and the parts that were weak and write about it briefly. In the reflection, teachers can share their thoughts and feelings about their lessons including things about the lesson that were successfully implemented, need improvement, or could be adjusted in the future. As in the DLL, teachers can also talk about their learners who did well in the lesson and those who need help.

The specific purpose for which lesson reflection is required of the teachers to fill out is not clearly specified in the order, neither it is covered in the monitoring and evaluation of the policy, to quote:

> VII. Monitoring and Evaluation

> 56. The preparation of the DLP and DLL shall be part of the performance assessment of those who are in teacher I-III and Master Teacher I-IV positions through the RPMS. Compliance with DLP and DLL preparation shall be monitored following the RPMS cycle. Teachers with exemplary DLLs or DLPs may be provided with incentives. The definition and rubrics of exemplary DLLs or DLPs will be issued in a separate policy.

While the inclusion of lesson reflection is initiated and prayed for by the department for the teachers to see its importance, there are already issues on the part of the teachers seeing the use of DLL itself as just an added burden to their day-to-day work, that an appeal for the recall of DO 42, s. 2016 was raised by the Alliance of Concerned Teachers (ACT) Teachers Partylist and the Teachers Dignity Coalition (TDC) regarding the preparation of the Daily Lesson Log. Because of this, DepEd had to issue an official statement (dated July 29, 2016) clarifying the department's position on the matter. In its official statement, the department highlighted that while the agency understands the concern of the teachers, it 'wishes to assure teachers and the public that the new DLL format was created with the best interests of teachers in mind.' The statement further emphasized the importance of preparing the DLL as:

> 'Research has shown that a common trait that effective teachers share is planning, preparing for, and reflecting on their teaching. The DepEd Order was issued to accompany the changes in the curriculum, and changes in the curriculum also require greater capacity in teaching. The DepEd is committed to ensure that its teachers are not only effective but also capable of delivering quality instruction on a daily basis.' (From DepEd Official Statement dated 29 July 2016 – see attachment)

However, even the monitoring and evaluation policy of DLLs and DLPs do not specifically focus reflection as a separate item in the determination of exemplary lesson plans in terms of its specific role in the teaching and learning process. This particular area of lesson planning

opens an opportunity to conduct this study to provide a deeper understanding on the role of lesson reflection. Although lesson reflection is encouraged by the department on the teachers to practice, the lack of a systematic approach on how to do it and how the results of such reflections are processed and utilized in connection with meeting desired student learning outcome puts forth the need for this study.

The results of Programme for International Student Assessment (PISA) 2018 which was released in December 2019 reflected the dismal condition of Philippine Education. The results of said assessment identified the Philippines at the tail end among all other 79 countries that participated in the examination. Though it may be arguable that it was the first time for the country to participate in such assessment and other factors to that effect may have played role in the unfavourable results for Philippine student-takers, still the results spoke for what has been transpiring in different classrooms across the country. The researcher believes that the urgency of need lies not in the deliberation of curriculum content, but in the examination of processes

whereby teaching and learning is carried out. Looking into lesson delivery with reflection on areas that affect student learning should therefore be taken with imperative urgency if only to ascertain that at the very least students are accorded the right learning content through the right method specific to their learning needs.

The absence of a particular study concerning the use of lesson reflection under DO 42 s 2016 and how such reflection could be purposively utilized in meeting desired student learning outcomes propelled the researcher to undertake this research work. This study would provide an empirical basis for strengthening the policy's rationale in employing lesson reflection in meeting desired learning outcomes of the students. The process of lesson reflection which is intended for a specific goal, in this case the meeting of desired learning outcomes of the students under the K to12 Basic Education Curriculum, would be purpose driven as lesson study takes a cyclical approach, that is serving as mechanism to allow educators find appropriate instructional strategies suited to the students' ability to learn.

The purpose of this study was to emphasize the employment of lesson reflection through lesson study to provide meaning and lend direction to educators review and revisions of different teaching approaches or strategies in the effort of meeting desired learning on the part of the students. This would allow a deeper understanding of how lesson reflection works and how it may create a purposeful learning environment. The results of this study would provide meaning to the purpose of having teachers write their lesson reflection every after-lesson delivery and why a systematically purposeful conduct in doing a lesson reflection is important and necessary. The outcome of this study would offer a different yet meaningful rationale for DO 42 s 2016 and its implementation. In addition, this would support the Philippine Association of Lesson and Learning Studies and DepEd advocacy for adapting lesson study or for implementing lesson reflection in the context of lesson study.

Statement of the problem

This study sought to determine the perspectives of teachers and school leaders in secondary schools regarding the use of reflections through lesson study in meeting desired learning

outcomes under the Kto12 Basic Education Curriculum. More specifically, this study focused on the subproblems:

1. What are the teachers and school leaders' perspectives on lesson reflection in the context of Lesson Study?
2. How does lesson reflection affect instruction?
3. What are the participants' perspectives on using reflection through Lesson Study to meet desired learning outcomes?

Theoretical Framework

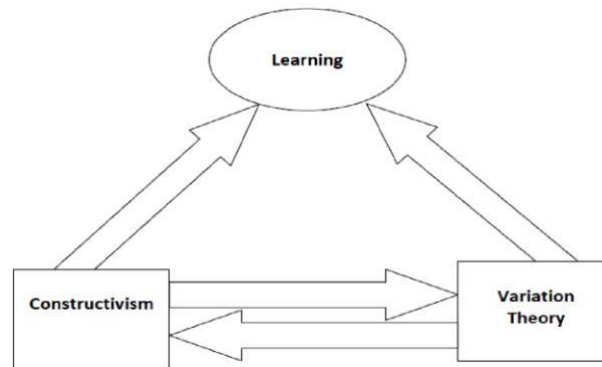**Constructivist Learning Theory and Variation Theory**

This study is anchored on constructivist learning theory and variation theory. These learning theories are identified in this study as two interlocking phenomena serving as main avenues that pave the way for student learning.

The interpretation of constructivism underpinned by this study is that of Dewey (1956) who was one of the pioneers of modern constructivism. The kind of understanding of a constructivist classroom that follows Dewey's interpretation is one in which there is a balance between teacher and student-directed learning and requires teachers to take an active role in the learning process (Shah, 2019). This is distinct from the constructivism which was construed by Rousseau (1762) who asserted that educators should intervene as little as possible with the natural development of children (as cited in Shah, 2019). Following Dewey's thinking of constructivism, constructivist teaching is where teachers are able to create a place where learners can work together and support each other as they use a variety of tools and information resources in their pursuit of learning goals and problem-solving activities (Miller-First & Ballard, 2017). In addition, teachers need to reflect on their practice in order to apply ideas to their work and encourage students to constantly assess how the activity is helping them gain understanding (Bada, 2015).

Equally important theory to which this study is anchored on is variation theory as proposed by Marton and Booth (1997). This theory of variation is drawn from the phenomenographical research tradition. Phenomenography argues that individuals understand phenomena in the world differently because experience is always partial and that different ways of experiencing a phenomenon may be understood in terms of which aspects or features of the phenomenon are discerned, and not discerned, in people's awareness of it (Marton and Booth, 1997). According to Marton's Theory of Variation, discernment of critical features occurs under systematic interaction between learner and the thing to be learnt, and variation is the agent that generates such interaction. This requires teachers to engage closely with their students to grasp the variations in understandings and knowledge so they can take account of this diversity in structuring the learning activities in a lesson (Marton & Tsui, 2004). Variation, therefore, is a primary factor in encouraging student learning as it sees learning as the ability to discern different features or aspects of what is being learned. It postulates that the conception one forms about something or how something is understood is related to the aspects of the object one

notices and focuses on. Moreover, in variation theory, the aspects an individual has discerned reflect the way that person understands the phenomenon. This means the outcome of variation theory can be used to design and test the outcome of instruction (Holmqvist & Per Selin, 2019).

It is with the above elaborations of the two theories that the current study banks on the indispensability of constructivist learning theory and variation theory in meeting desired student learning outcome. The graphical illustration below shows how these two theories equally intertwine as foundations of learning.

Graphical Illustration of how Constructivism Theory and Variation Theory lay down the intertwining foundation of Learning as emphasized in this study (Researcher's own illustration)

Classroom Implication and Teaching Strategies

The application of the Theory of Variation has become increasingly popular in Lesson Studies

Variation theory argues that the most effective way to help students understand a concept is to focus on providing opportunities for students to experience variation in the features of the concept that they currently take for granted (Marton and Tsui, 2004). Marton and Tsui (2004) specify four patterns of variation were proposed: contrast, generalization, separation and fusion. They form the kernel for discernment under variation. Contrast is to discern whether something satisfies a certain condition or not, that is, whether something "is" or "isn't" and seeks to distinguish different and unlike things. Separation is the awareness of critical features and/or dimensions of variation. A dimension of variation is an emerging feature of a phenomenon which can take on different "values" while some aspects of the phenomenon are varying. Separation is an awareness of part-whole relationship awakened by a systematic refined contrast obtained by purposely varying or not varying certain aspects aiming to differentiate the invariant parts from a whole. Generalization is a variation interaction that is inductive in nature. When the same invariant pattern appears in different situations under contrast and separation, this pattern may be de-contextualized. Generalization is a purposeful contrast to explore whether an observed pattern can occur while certain aspects vary. Fusion integrates critical features or dimensions of variation into a whole under simultaneous co-variation.

"Variation theory reminds us of the important role of the teacher in designing learning experiences for students to make it possible for them to appropriate the object of learning. This involves the teacher studying the object of learning carefully, finding out students' learning difficulties, identifying the object's critical features, and designing appropriate patterns of variation that help students to discern the critical features and their relationships" (Mun Ling, 2012).

Conceptual Framework

This section encapsulates the general idea of the study centering on the role of lesson reflection in achieving the desired learning outcomes of the students.

The process of reflection on lessons conducted is a way of allowing teachers to find ways suited to their learners' capacity and ability to learn. Reflection is a cyclical process that provides the opportunity for teachers to study how their teaching methodologies and approaches impacted the learning of the students by revisiting the teaching procedures they employed and the amount of learning the students received. This encapsulates the idea that there are varied ways for the students to learn and these variations can be identified when teachers do a series of reflections on their lessons. This process makes reflective teaching meaningful and purposeful.
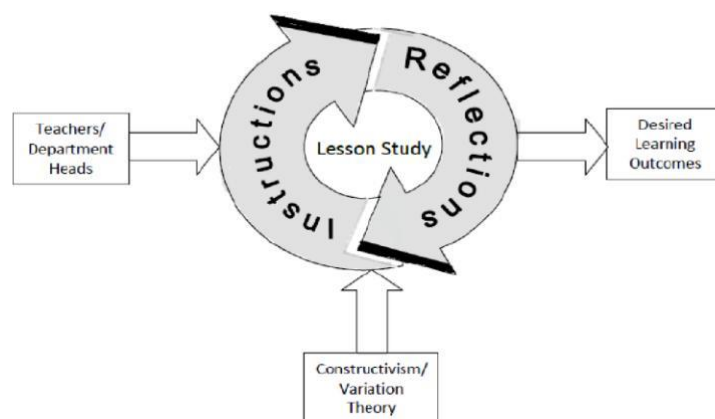
Figure 1. Research Paradigm

The above diagram shows the process on how teachers can make use of their lesson reflections after lesson delivery. In lesson study, the reflections made by the teachers are revisited and considered for purposes of furthering learning activities that are expected to help students better understand topics and therefore learn. This process of reflective teaching is guided by constructivism as a theory of learning and variation theory which underscores the important role of the teacher in designing learning experiences for students to make it possible for them to appropriate the object of learning.

This study sought to determine the perspectives of teachers and school leaders on how reflections in the context of lesson study guided by constructivist and variation theories can bring about desired learning outcomes under the Kto12 Basic Education Curriculum by understanding perspectives on reflections in a lesson study, describing how reflections through lesson study affect instruction, and determining the role of reflections through lesson study in meeting desired learning outcomes.

Scope and Limitations of the Study

The scope of the study are: a) this study focused on lesson 'reflections' made in a lesson study, b) the participants were only those teachers and school leaders who had actually participated and conducted the lesson study in their schools, c) academic year coverage would only be for one school year, minimum, d) the schools are secondary schools from public and private institutions. One was North Fairview High School, a public secondary school in Quezon City, Philippines; and, the secondary school department of Bina Bangsa School, a private school in Jakarta, Indonesia, e) participants in this study were chosen purposively during the academic year 2021-2022.

The limitations of the study are: a) findings of this study would not be used for generalizations, b) findings of this study would be used to recommend actions aligned to the use of reflections through lesson study in meeting desired learning outcomes under the enhanced basic education curriculum.

2. Literature Review

Reflective Teaching

Lesson reflection has created various changes on the way teaching is perceived and delivered in different contexts. In a study on reflections on teaching and learning of mathematics through lesson study and video critique (Ikzan, Z.H. & Rahim, M.B., 2017), an analysis of the data revealed that the majority of participants were able to give suggestions for improvement of future teaching and learning. It shows that some of the excellent teachers can justify taking appropriate action in order to solve problems in teaching and learning. Teachers need to reflect on their practice in order to apply ideas to their work and encourage students to constantly assess how the activity is helping them gain understanding (Bada, 2015).

Dewey (1933) was among the first to identify reflection as a specialized form of thinking. He considered reflection to stem from doubt, hesitation or perplexity related to a directly experienced situation. For him, this prompted purposeful inquiry and problem resolution (Sinclair, 1998). According to Dana Di Pardo, a senior researching lecturer and author of Reflective Teaching Journal, reflective teaching is a process whereby teachers reflect on their teaching practices in order to examine the overall effectiveness of their instructive approaches. Consequently, improvement or change in teaching methods may be required, depending on the outcome of this analytical process, which is based on critical reflection.

Regardless of the level of structure or formality with which reflection is undertaken, reflective teachers audit their professional behavior, knowledge, skills and planning. It must be noted, however, that in teaching, a lesson plan may not work as well as you had expected due to a number of extraneous circumstances, reflect on what worked well and why, and what you could have done differently (Milkova, 2012). Evaluating their own teaching through reflective strategies thus assists them in analyzing their teaching approaches and the effectiveness of their strategies, providing them with information with which to improve their pedagogy and increase student learning (Giaimo-Ballard & Hyatt, 2012). Reflective teaching provides valuable insights into teaching, allows teachers to monitor their students' progress, and deepen the

teachers' understanding of classroom events. Openness to change and improvement is a main supporting factor to teacher reflection (Sinno, 2016). Moreover, reflective teaching is a holistic thought that enables a teacher to make choices and alternative actions and allows teachers to think to improve teaching and learning decisions in the classroom (Parasuraman et al., 2020).

Reflective teaching is an enabler of teacher efficacy. In one study, it was established that there was a positive correlation between the teachers' reflectivity and self-efficacy which means that the reflective practices by the teacher will eventually lead to teachers' efficacy (Hafiz et al., 2017). Teachers use reflective teaching practice to create meaning from their classroom experiences and enact necessary steps toward improvement. Through reflective teaching practice, participants were able to examine their teaching, assess students' learning, seek new ideas and test theories to gain new perspectives on their classroom experiences (Disu, 2017).

Building a collaborative school culture can be achieved through the adaption of reflective practice in the workplace through the development of reflection-generating activities as collaborative teacher evaluation and mentorship, critical friends, team-teaching and peer-coaching (Farell, 2021). This approach can be made possible when reflective teachers acknowledge a more exhaustive impact of reflection when done collectively. For example, it was found out that constructed narrative vignettes of teachers' talk and meaning-making demonstrate how the group asked questions emerging out of their practice, discussed specific ways to meet students' needs, and shared advice on how to navigate the technical aspects of teaching (Steeg, 2016). In addition, another study cited that scaffolded collaborative lesson planning experience created impact on their teaching profession as they articulated the activity as a venue for mutual leadership leading to increased feeling of effectiveness and improved teacher professional identity (Gutierez, 2019). Moreover, it was established that reflection through coaching with deans or administrator whose primary job is to observe and provide feedback, led to teaching effectiveness. Participants valued this practice because they were able to discuss areas in need of improvement as well as the strength in the delivery of their lesson, and devised action plans toward improved instruction and student learning (Disu, 2017). In this case, the teachers' effectiveness in the use of reflection can be attributed to the coaching or mentoring of their school heads. Dialogue promotes the kind of collaborative, strategic and reflective thinking that has been found to be vital in facilitating teachers' and others' learning (Clarke, 2017).

The practice of reflective teaching also makes its way to the teaching and learning process through teacher professional development. Professional development programs should expose teachers with the right skills of reflecting on practice and encourage such practice to be employed on daily basis and be embraced as a culture in teaching profession (Zakaria, 2020). Moreover, effective teaching is expected most likely to occur since reflective practice is considered as the essence of teachers' growth, professional development, and better teaching and learning (Fakazli, 2021). In a study about reflection among English as Foreign Language (EFL) teachers, reflective practice permeates lesson study as teachers reflect on their practice both individually and collaboratively. Teacher agency can be promoted in reflective practice throughout lesson study. Reflection in lesson study can support transformative teacher agency among EFL teachers (Ustuk and De Costa, 2020). Teachers can deal with the needs and

different issues of the learner and demand of time if they reflect on their daily teaching activities for their professional growth (Mathew, 2017).

As regards teacher training, it is strongly believed that teachers should be involved in reflective practices so as to become professional and effective teachers (Cimer et al., 2013 as cited in Fakazli, 2021). Teachers should be trained, conversant with and constantly use reflective teaching strategy as this produces better achievement in students (Boris, 2019). In a study between a novice and experienced language teacher, the experienced one practiced majority of the reflective teaching components as compared to the shifting, inconsistent reflective practices of the novice teacher (Dela Rosa, 2017). However, structured written reflection supported novice's developing understanding of the connection between knowledge and action in practice, or reflective practice (Hayden & Chiu, 2014). In another study, it was revealed that experienced teachers did not recognize reflective teaching practices, although they are stated in teacher standards and that teachers are expected to be aware of them. The teachers use of reflection was mostly limited to their reflection of students' work in lessons, not on their teaching practice (Yanuarti, 2015). Hence, student-teachers need to be trained in reflective teaching so that they will be familiar with the different approaches of reflective teaching and tools and techniques used for observing and analyzing classroom interaction and improve upon their teaching skills (Kumari, 2014).

Reflective teaching has been found to have link to student performance. Accordingly, reflective teaching strategy produced better achievement in students (Awodun, 2020). In a study on the relationship between reflective teaching and English as a Foreign Language (EFL) teachers' evaluation of students' achievements, many of the teachers are not aware of the outcomes of their stated cognitions on their teaching process, and consequently, on their evaluation of students' achievement. There is a moderate relationship between reflective teaching and teachers' evaluation of students' achievement (Yazdani et al., 2015). On a different note, it was found in teaching English in an EFL classroom that reflective classroom instruction and students' autonomous learning is more helpful than the traditional classroom alone as the combination of reflective instruction and students' autonomous learning provide more useful information, solve students' doubts, and enable students to take an active role in learning (Qing, 2013). In establishing a dialogic-reflective tone in the pedagogical relationship, the teacher or professor opens path to new discoveries, enabling the creation of teaching-learning spaces that stimulate autonomy, abilities, and critical and reflective attitudes of students along their education (de Lima et al., 2016). The better the pedagogical skills, the better are the teachers' relationship with the students (Jesus-Silva et al., 2018) and that scores of students' assessments improved after teachers started reflective practices (Aziz et al., 2017).

In the area of communication, reflective teaching is an alternative to raise awareness about English language teaching, and as a means to encourage teachers to open their minds, update their teaching methodologies and make adjustments to their lessons (Mesa, 2018). In reading, the teacher should specially consider which reading strategy is the most appropriate for his/her students or class, how to analyze students' needs, how to reflect on his/her actions in the class, and how to evaluate the reflected data for his/her progress (Oo and Habok, 2020). Reflection-

for-action is very helpful to help the teachers to plan a meaningful lesson, to improve their teaching and to maximize their students' learning and knowledge of the target language. With reflection-for-action, teachers manage to plan specific teaching activities to deliver specific skills in English language (Hashim and Yusoff, 2020). In effect, the practice of reflective teaching improves the quality of teaching practice and increases students' motivation towards language learning in classroom (Ashraf et al., 2016).

There are many forms of reflection, including instruments used to measure it. Different instruments of reflection such as demonstrated the validation and reliability of measuring reflection such as the Reflection Questionnaire (Kember et al., 2000) and the Reflection in Learning Scale (Sobral, 2001) (as cited in Kalk et. Al., 2014). But while reflective teaching can be assessed in terms of its effectiveness and in determining its impact on the teaching and learning process, in most of the cases, teachers wrote reflections at technical and factual level horizon and limited to catering few areas of teaching and learning process (Aziz et al., 2017). Inarguably, through reflective teaching, teachers have the ability to identify the dilemmas and issues and to some extent change their strategies as well and try to solve the issues (Aziz et al., 2017). In fact, in one study it was found that the degree of employment of reflective teaching practices by teachers was somewhat low but also varied depending on the kind of questions raised (Bawaneh et al., 2020). It is to be noted here that some form of change was effected regardless of its extent. It is also noteworthy that teachers exert effort in making reflection productive as in the case of one study where a cyclic process of producing a module during training had improved the skills and performance of teachers as they revised and modified their teaching strategies through reflective practice (Zahid and Khanam, 2019). Reflective practice helps teachers free themselves from the constraints of a routine and impulsive behavior (Maksimovic, 2019). Reflecting on what went right and wrong with lessons and classroom situation is one thing. However, figuring out on what to do with that information is quite another. Time spent in reflection can help ensure that this information can be used to produce real change for growth to occur (Kelly, 2018).

Reflective teaching has a lot to offer in terms of teaching strategies even in the field of co-curricular activities. In one study, the reflective thinking framework allowed preservice physical education teachers to focus on their application of their knowledge and enabled them to generate a conscious awareness of their professional development. As a result physical education teachers displayed professional development in proper planning, time management, and use of school facilities (Dervent, 2015). Affectively, reflective teaching addresses teachers' concerns. Teachers not only reflect to respond to a problem, but also they reflect to diminish some negative factors like stress and anxiety on the part of both learners and themselves as well as improving, enhancing, or mending something in teaching or learning (Tabassi et al., 2020).

While reflective teaching is widely hailed as a good approach to a meaningful teaching and learning process, it also has its own share of hurdles that form as stumbling blocks in its successful implementation. Hurdles that cannot be ignored not because they are unavoidable, but because they themselves need addressing. For example, reflective teaching strategies such as journaling, diary writing, and video recording are scarcely used due to teachers' workload,

induced time constraint, fatigue, and limited knowledge of reflective teaching (Hung and Thuy, 2021). Another example is that, board teachers believe video-enhanced reflection to be impactful, however, due to barriers it is not utilized frequently (Jones, 2020). And finally, the prevalent time constraints, culture, and the teachers' resistance are major inhibitors of reflection (Sinno, 2016).

Lesson Study

Lesson Study (Meaning and Origin)

The origins of Lesson Study can be traced to educational practice in the Meiji period of Japan. It began from the observation of teaching methods in whole classroom teaching which had been firstly introduced in schools beyond the temple school culture which used tutorial teaching methods. According to Wakabayashi and Shirai (cited in Isoda, 2011), Lesson Study first began at the Tokyo Normal School, which later became the University of Tsukuba, in 1870s. From the very beginning teachers were focused on argumentation through questioning instead on lecture style method. People observed the ways of teaching for knowing how-to conduct teaching and learning process (Makinae, 2010). As a result, Teachers' Canon was published by the Normal School in 1873, which described the etiquette for entering classroom, for observation of lessons, and for avoiding the negative effects of observations (Inprasihta, 2006). Since then Lesson Study has functioned in Japan as a way of enabling teachers to develop and study their own teaching practices and shed light on the local theories of education (Pjanic, 2014).

Lesson study is derived from the Japanese words jugyo ken-kyuu, and the term lesson study was coined in 1999 by Makoto Yoshida in his doctoral dissertation Lesson study: A case study of a Japanese approach to improving instruction through school-based teacher development (Takahashi & Yoshida, 2004). It can also be translated and interpreted as research lesson.

Lesson Study is a process in which teachers progressively and systematically strive to improve their teaching methods by working with other teachers to examine and critique each other's' teaching techniques. This examination centers on teachers working collaboratively on a number of "study lessons". Working on study lessons involves planning, teaching, observing, reflecting and critiquing the lessons. To provide focus and direction to this work, the teachers select an overarching goal and related research question that they want to explore. The research question then serves to guide their work on all aspects of the lessons they study (Pjanic, 2014).

Generally, the following four dimensions of Lesson Study can be pointed out: – The collaborative activity, – The form of research related to lesson, – Importance that the pupils are kept at the heart of the process, – The understanding of the process that is primarily focused on content and pupils rather than on technology and tools. The cycle of the lesson study goes as follows. While working on a study lesson, teachers jointly draw up a detailed plan for the lesson, which one of the teachers uses to teach the lesson in an actual classroom and other members of the group observe. This group of observes may be joined by others: observers could be just the faculty within a school, or a wider group: teachers from several schools sometimes joined the university instructors and supervisors from the board of education. Usually observers record lessons, as well as their impressions of lessons in multiple ways. A

discussion of the lesson follows. Typically, such a gathering begins with presentations by the teachers who taught and co-planned the lesson, followed by free or structured discussion. Upon review of the lesson, another teacher usually implements it in a second classroom, while group members again observe. The group will come together again to discuss the observed instruction. Finally, the teachers produce a report of what their study lessons have taught them, particularly with respect to their research question (Pjanic, 2014).

During a Lesson Study cycle a small group of teachers (or even a pair) will: (a.) use the data they have gathered from day to day and periodic assessment to agree a focus for the pupil learning and progress, (b.) jointly identify a teaching technique to develop or improve which addresses that need, (c.) identify around three 'case pupils', each should typify a group of learners in the class – for example high, middle or lower attaining in the strand being taught and developed, (d.) jointly plan a 'research lesson' which both uses develops and closely studies the effects of this new approach –.and keeps in mind the three case pupils, (e.) teach and jointly observe the research lesson focusing on the case pupils' learning and progress, they may repeat and refine this over several lessons, (f.) interview the case pupils to gain their insights into the research lesson, (g.) Hold a post research lesson discussion analyzing how the case pupils responded to the technique, what progress they made, what evidence of learning or of difficulties with learning they displayed and what can be learned about the way the teaching or learning approach is further developed – next time, (h.) Formally share the outcomes with a wider audience of other teachers – in a presentation, by demonstration or by coaching.

Framework of Lesson Study as a Learning Community

Ose and Sato (2003) summarized the principles of Lesson Study as a Learning Community (LSLC) as (a) the school should be developed into a community where every single child can learn and grow, teachers can engage in mutual learning as professionals, and parents and citizens can learn through participation in educational practices (b) every teacher should invite colleagues for observation and reflection at least once a year, in order to share her or his classroom practices with them and engage in mutual learning by analyzing the same (c) a listening relationship and a dialogical relationship must be established among members of a school in order to develop learning relationships in classrooms and collegiality among teachers as professionals (d) participation and collaboration of parents and citizens is required for the sustenance of a learning community.

The most frequently documented experiences of teachers were the belief lesson study helped growth as a teacher; the desire to participate on future lesson study research teams; an increased focus on student learning; a positive experience overall; and the value found in collaboration. Teacher reflections also confirmed the work of Cohn and Honigsfeld (2007), noting that student performance data improved after participating in lesson study (cited in Thompson, D.P., 2012) Teachers were inspired by lesson study to focus on student growth and learning, confirming the findings of Ylonen and Norwich (2012).

In one study, it was noted that there were some slight and slow changes in the teachers' reflection as they progressed from the first to the fifth reflection sessions (Fen et al., 2017). These changes included teachers' reflection became more in-depth and that they reflected from

the pupils' perspectives. Also, there are positive impacts of Lesson Study towards the quality of teachers' competencies as well as students' academic achievement (Mutarutinya et al., 2020).

Lesson Study and Pedagogical Reform

In introducing Lesson Study as a learning community, there is an emphasis on a change in teaching style from the conventional approach to collaborative learning, which is categorized as the social constructivist approach (Sato, 2006). In other words, learning is based on mediation by both tools and humans (Kozulin, 2003). This shift in the processes of teaching and learning requires the establishment of dialogue in the classroom through which students can feel calm, settled, and engage in meaningful learning (Sato, 2006; Sato and Sato, 2003).

In order to create an environment of such engagement, teachers must adjust their attitudes towards children – accepting every single child and valuing his or her ideas and utterances as precious (Sato, 2006). There are always reasons behind the actions and remarks of children, and it is important for teachers to accept and understand them. Moreover, Sato (2006) underlined, there is a need for teachers to change their professional identity from that of "a speaking profession" to "a listening profession". By listening more to children, teachers ensure that children's ideas and opinions are heard and that more time is devoted to activities. Further, Sato and Sato (2003) proposed a strategy to reform pedagogy using the three elements, (1) concrete materials: some operation or activity should be conducted; (2) group activities consisting of three or four students; and (3) sharing representations: dialogues to examine each student's thoughts and ideas.

Spread of Lesson Study

Lesson Study is a highly specified form of classroom action research focusing on the development of teacher practice knowledge. It has been in use in Japan since the 1870s. Lesson study therefore pre-dates action research as we know it in the West, by some 70 years.

Lesson Study involves groups of teachers collaboratively planning, teaching, observing and analyzing learning and teaching in 'research lessons'. They record their findings. Over a cycle of research lessons they may innovate or refine a pedagogical approach which will be shared with others both through public research lessons, and through the publication of a paper outlining their work.

Lesson Study only started to become popular in the west following the success attributed to it by US researchers in developing deep teacher knowledge of both pedagogy and of subject amongst Japanese teachers which leads to high standards of educational attainment by Japanese pupils when compared with those of comparable groups of pupils in the US (Stigler and Hiebert, 1999; TIMSS., 1999).

In East Asia LS is now in use beyond Japan in countries such as Singapore, Hong Kong, and China. In the West it is in use in countries including the US, the UK, Sweden and Canada (Dudley, 2011).

"Lesson study is a wonderful way of getting teachers to re-think their classroom practices" (Lee, 2011). Lesson study is a method of professional development that encourages teachers to reflect on their teaching practice through a cyclical process of collaborative lesson planning, lesson observation, and examination of student learning (Lenski & Caskey, 2009)

Lesson Study in the Philippines

The Philippine Association of Lesson and Learning Studies (PALS) Inc. was inaugurated on 10 December 2016 at the Pearl of the Orient Tower in Manila. Educators and teachers from Metro Manila, Cavite, and Bicol Region attended the event. During the inauguration, the members of the Board of Trustees and Incorporators were introduced. Fr. Onofre Inocencio Jr, PALS President, presented the vision, mission, and strategic directions of the association. PALS elected officers also include Dr. Erlina Ronda of UP NISMED (Vice President), Iris Therese Velasco of Keys School Manila (Secretary), and Dr. Aida Yap of UP NISMED (Treasurer). During the launch, three keynote speakers talked about lesson study. The first was Dr. Masami Isoda, Director of the Center for Research on International Educational Development (CRICED) who talked about lesson study in Japan. The second speaker was Dr. Soledad A. Ulep, Director of UP NISMED, who talked about the Institute's effort in spreading lesson study. The third speaker was Maylani Galicia, Supervisor in Mathematics of Division of Albay talked about how lesson study spread throughout the division.

Some adaptations of Lesson Study conducted in the country focus on the strength of LS in the area of teacher growth and professional development. It is through LS that teachers appreciate working among their colleagues through collaborative lesson planning (Ebaeguin, 2015). Through LS teachers found the opportunity to provide insightful reflections on their instructional practices (Gutierez, 2015), and provided an avenue for the teachers in connecting their teaching experiences with reflections to promote new insights into the teaching process (Lucenario, 2016).

But while LS have been generally considered as a promising approach to teacher development, it is important to note that a simple replication of process of conducting LS the way it was carried out originally in Japan may not fit outrightly well in the country. This is because of cultural differences and traditions that apparently are way uncommon between the origin of LS to the cultures and traditions that we have in the country. One aspect is the mindset and classroom orientations of our teachers. According to Elipane (2017) the teachers' mindset or general teaching cultures appeared to be crucial if there is a desire to successfully implement LS in the Philippines. Initial barriers to LS implementation included negative feelings experienced by the teachers at the onset (Laynesa et al., 2013 as cited in Lomibao, 2016). In a study that determined the effects of Lesson Study in enhancing the efficacy, attitude, and pedagogical content of senior high school teachers, it was revealed that the nature of teachers' engagement across stages of Lesson Study cycle was characterized as less collaborative and the extent of engagement was described as partially engaged (Plantado, 2020). Furthermore, there are issues within and among the collegial spheres of the teachers that are pointing to the notions of cooperation, openness, and even power relations (Elipane, 2017).

Learning Outcomes

The ideal teacher is a competent reflective practitioner who responds effectively to the learning needs of a wide range of pupils. The most effective teachers deliver concrete, explicit, and engaging instruction, implement evidence-based classroom management and teaching strategies (Macsuga-Gage, Simonsen, & Briere, 2012 as cited in Paolini, 2015). It is important for teachers to have passion for teaching and learning as well as to understand needs and interests of the students (Jalbani, 2014).

Reflective approach to teaching provides for the improvement and enhancement of teachers' instructional performance as well as their students 'learning. The main purpose of reflection is to analyze and learn from experience, rather than just living the experience. It helps teachers refine their own understanding of themselves and their classroom practice, thus increasing their students 'learning. The teachers' analyses of their instructional practices deepen as they engage continuously in collaborative and constructive self-assessment and discussions (Gutierez, 2015 cited in Lomibao, L.S., 2016)

There are students who get nervous when the teacher asks questions. They say that they learn nothing when the teacher does the questioning. Perhaps, questioning, both a teacher behavior and an important instructional strategy (Kim & Kellough, 1987) does not need to be dominated by the teacher any longer. From the planning to the implementation stages, there is a need for the teachers on pupils' understanding. The schools and teachers, in particular, should find ways to improve the current state of the pupils' learning outcome.

There is a significant relationship between the reflective thinking skills of teachers and teachers' creativity. Teachers with reflective thinking skills have a higher degree of response that leads to a higher level of interest (Parasuman et. al., 1985). Teachers' intelligence as a key to creativity generate ideas that are novel and of high quality leading to right direction on what to teach to the clientele.

Philosophies emphasized the role of the teacher as a facilitator of learning, and the helping nature of teaching. They include a conception of how chosen methods would bring about gainful outcome from the teaching-learning process. Although subject matter expertise is essential to one's excellence, it has been revealed to be of consequence only within the purview of the quality of the teacher's relationship with students, with himself/herself and with others and his particular way with teaching methodologies.

Experiential learning is a paradigm of noteworthy learning that supports multiple learning objectives of learners and shapes their knowledge through experience (Abeysiriwardhane et al., 2020). Giving greater autonomy on the student during the learning process allows the students to learn by doing in a process of trail, error and correction in order to promote creative thinking while achieving meaningful learning (Mendoza et al., 2019). The students benefit from the process of learning by doing. It assisted them to discover knowledge as in the case of designing English teaching materials and English teaching skills by themselves (Likitrattanaporn, 2017). In doing experiment, learning success occurs only if the pupils themselves draw the right conclusions from the experiment. It is more likely that they remember the learning matter than if they were only just told the result, learning through

reflection (Loob, 2019). This experience spawns realizations and confidence that they could solve the problem according to how they approach it (Baclit & Coronado, 2014).

The learn by doing pedagogical approach aims to establish key building blocks in critical thinking and confidence which provides students with exposure and experience to unstructured problems like in the real world (Schroeter and Higgins, 2016). Teaching format should emphasize active learning on the part of the students, empowering them to take responsibility for the learning process (Slezak, 2014). Students develop technical skills, soft skills and learn about evaluation context via practical experiences (Nowariak, 2014).

Teachers who had information about reflective teaching made some changes in the lesson plan because they thought that a lesson plan for the learning objectives ignoring students' prior knowledge is ineffective (Orakci, 2021). Formative assessment helps a teacher to design an effective lesson plan. Through the assessment process, the teacher can identify the strengths and weaknesses of the students and give corrective feedback (Iqbal et al., 2021). Moreover, reflection journals help students to become independent learners, reflect on their learning experiences, and identify the most useful learning strategies (Xhaferi and Xhaferi, 2017). Worthy of interest also is that reflective activities in the short term appear to affect students on an affective level rather than a cognitive level (Cavilla, 2017).

Synthesis of the Reviewed Literature and Studies

Reflective teaching is seen as a way of improving not only the teacher's ability to strengthen areas for improvement in the delivery of lessons but also provides wider opportunities for the students to learn. It is through a deeper understanding of one's way of unpacking learning methodologies by going back to what transpires in the course of the teaching and learning process that a teacher is enabled to identify core issues that may significantly affect learning. As teaching is never a one-way process, reflection of one's instructional deliveries can allow various situations that may be directly influential on the students' learning. This way, learning on the part of the students becomes diverse and exploratory. It also gives meaning to the experiences that learners go through in the course of learning their lessons. Lesson reflection also provides learning on the part of the teachers. It may give a sense of fulfillment for the chosen profession as teachers can see the outcome of their efforts in imparting knowledge to the students.

The absence of a particular study concerning the use of lesson reflection under DO 42 s 2016 and how such reflection could be purposively utilized in meeting desired student learning outcomes propelled the researcher to undertake this research work. This study would provide an empirical basis for strengthening the policy's rationale in employing lesson reflection in meeting desired learning outcomes of the students. The rationale of this study was to emphasize the employment of lesson reflection through lesson study to provide meaning and lend direction to educators review and revisions of different teaching approaches or strategies in the effort of meeting desired learning on the part of the students.

3. Methodology

Research Design

This is a qualitative descriptive case study.

A qualitative research approach for this study was chosen because qualitative methods are especially useful in discovering the meaning that people give to events that they experience (Merriam, 1998), drawn from interpretivist and constructivist paradigms (Denzin & Lincoln, 2011) that seek to build knowledge from understanding individuals' unique viewpoints and from there make sense of their experience (Creswell & Poth, 2018 as cited by Tomaszewski et al., 2020). Specifically, the case study method which investigates real-life phenomenon (Yin, 2017) and is particularly useful for researching educational interventions because it offers a rich description of interconnected factors (Tomaszewski et al., 2020) was used to determine the overall perspectives of teachers and school heads regarding the use of reflections through lesson study in meeting desired learning outcomes.

Tradition of Inquiry

This research work used a case study to capture the range of perspectives of the participants and key informants regarding the use of lesson reflection in the context of Lesson Study. Case study was chosen as the mode of inquiry by the researcher to gain a greater understanding and deeper insights of the subject herein studied based on the experiences of the participants. The perspectives involved here were drawn out from the narrative experiences of secondary teachers and school leaders from North Fairview High School, a public school in Quezon City, Philippines and Bina Bangsa School, a private school in Jakarta, Indonesia. All of the participants had an actual experience doing a complete Lesson Study cycle for a minimum of one year. During this cycle, they did a series of lesson reflections about lesson delivery and students' learning.

The philosophical orientation of case study is that it is not assigned to a fixed ontological, epistemological, or methodological position (Rosenberg & Yates, 2007). This philosophical versatility provides the researcher with the opportunity to decide the methodological orientation used in the conduct of the case study. The fundamental goal of case study research is to conduct an in-depth analysis of an issue, within its context with a view to understand the issue from the perspective of the participants (Merriam, 2009; Simons, 2009; Stake, 2006; Yin, 2014).

Data Generation Method

The data were gathered using one-on-one In-depth interview via online communication app Zoom. The researcher used a semi-structured questions from an interview guide as instrument. The language used in the conduct of interview was a combination of English and Tagalog so that participants could freely express themselves in either English or Tagalog, or the combination of the two.

The interview was video recorded in the device, a laptop, which was used in the process. Direct video recording was made possible using Zoom recording feature capturing both the audio and the facial expressions and gestures of the participants while the interview was going on. When all of the interviews were concluded, the researcher transcribed the data by manually typing in word document the questions asked and the replies given in the interview. Each completed

transcript was labeled with initials that would represent the participant and key informant. Completed interview transcripts became the data corpus.

The participants of the interview were a combination of teachers (Lesson Study implementers) and school leaders (Year Level Heads and Department Head who served as Lesson Study Team Leaders) who were purposely chosen from a public school in Quezon City, Philippines, the North Fairview High School, and a private international school in Jakarta, Indonesia. Both schools have been conducting Lesson Study with all of the interview respondents actively involved at the time of the interview. Each interview lasted for about 40-50 minutes.

Moreover, the interview was conducted online on pre-scheduled dates. Ethical research was observed in the conduct of the interviews and they were informed of the following: (a) that they were participating in a research, (b) the purpose of the research, (c) the benefits of the research, (d) the procedures of the research, (e) the voluntary nature of research participation (discussion of their feedback), and (f) the procedures to be used to protect required confidentiality Specifically, the researcher introduced himself to the participants indicating the purpose of the interview. They were informed of the reason for having said interview.

In order for the participants to feel at ease, they were informed too that the interview would be for research purposes only and that their answers would not be taken against them. After they were briefed on the purpose of the study, the interview began and they replied to the questions in their preferred language which was either English or Tagalog or both.

Sources of Data

This study got its data from in-depth interviews (IDI) conducted with the participants. The participants came from a national high school in Quezon City, Philippines and from one of the international schools in Jakarta, Indonesia. Both schools, public and private respectively, have done a series of Lesson Studies in the past and at the time when the interview was conducted. Nine (9) participants, six teacher-implementers and three key informants, came from the national high school in Quezon City and four (4) participants, two teacher-implementers and two team leaders, came from the international school in Jakarta.

The researcher decided to include four participants from outside the country to complete a more compelling number of interview participants for the study who were qualified and available at the time. The employment of maximum variation purposive sampling used in this study justifies this decision and so does the tradition of inquiry being a case study. This mix of participants enriched the data having come from varied sources as well as the reviews of related studies. However, the conduct of triangulation of data was confined only to the participants and key informants of the study.

Data Analysis

This study used thematic analysis, particularly reflective thematic analysis by Braun and Clarke (2019). Thematic analysis is a popular method for analyzing data in many disciplines and fields and can be applied in different ways to lots of different data sets to answer different research questions. It is one of a cluster of methods that focus on identifying patterned meaning across a data set.

Reflexive thematic analysis in particular is advantageous in this study as it is theoretically flexible which means that it can be used within different frameworks to answer quite different types of questions (Braun and Clarke, 2019). Moreover, reflexive thematic analysis was used in this study because the researcher believed that there was a good fit between the theoretical framework of the study which is anchored on the constructivist theory vis-à-vis the narrative paradigm and the nature of research questions being addressed which sought to understand a set of experiences and thoughts across a data set (Braun and Clarke, 2012 as cited in Kiger and Varpio, 2020).

The following phases were covered in doing the analysis for this study using reflexive thematic analysis. Although these phases are sequential, and each builds on the previous, analysis is typically a recursive process, with movement back and forth between different phases. These are not rules to follow rigidly, but rather a series of conceptual and practice oriented 'tools' that guides the analysis to facilitate a rigorous process of data interrogation and engagement. With more experience (and smaller datasets), the analytic process can blur some of these phases together.

1. Familiarization with the data | This phase involves reading and re-reading the data, to become immersed and intimately familiar with its content.

The data were gathered via Zoom app with respondents' cameras on. Respondents' answers to the interview questions were recorded in the same device (laptop) used in the conduct of the interview.

At this phase, familiarization with the data was done by viewing and re-viewing the recorded video interviews with the respondents. Their responses were listened to repeatedly before transcribing a particular recording. Gestures, facial expressions, and other observable body language while respondents were speaking were also noted. Transcription of each interview recording began as the researcher felt ease in manually writing down responses. All transcriptions were manually type-written on word document, labeled indicating the identity of the respondent. When transcription of all interviews was completed, the data was read and re-read for further familiarization.

2. Coding | This phase involves generating succinct labels (codes!) that identify important features of the data that might be relevant to answering the research question. It involves coding the entire dataset, and after that, collating all the codes and all relevant data extracts, together for later stages of analysis. At this phase, the entire dataset were coded using Quirkos, a qualitative data analyzer software. The licensed version of this software was used. The research questions were used as anchor codes to the data. This way, the responses were coded according to the interview questions for a better organization of coded responses. The software was used to employ a faster and more organized arrangement of data coding. Some data set were coded more than once as they also provide meaningful answer to other questions. Organization of ideas was made by the researcher and not by the software.

3. Generating initial themes | This phase involves examining the codes and collated data to identify significant broader patterns of meaning (potential themes). It then involves collating data relevant to each candidate theme, so that you can work with the data and review the viability of each candidate theme. At this phase, the initial codes were examined, read, and re-read in search for patterns in the collated data. Based on coded responses under each research question, significant broader patterns of meaning were identified. These patterns of ideas were worded and became the initial themes for codes falling under such category. This process of finding themes was done for coded data under each research question.

4. Reviewing themes | This phase involves checking the candidate themes against the dataset, to determine that they tell a convincing story of the data, and one that answers the research question. In this phase, themes are typically refined, which sometimes involves them being split, combined, or discarded. In our TA approach, themes are defined as pattern of shared meaning underpinned by a central concept or idea.

At this phase, themes were reviewed against the data set. Codes assigned under each theme were also reviewed and verified whether the meaning they intended to convey fell under the theme they have been assigned. Sub-themes were created as a result of realizing broader patterns of meaning within initial themes. Codes were also assigned to these sub-themes upon checking that the meanings they created more appropriately fell under the sub-theme.

5. Defining and naming themes | This phase involves developing a detailed analysis of each theme, working out the scope and focus of each theme, determining the 'story' of each. It also involves deciding on an informative name for each theme. At this phase, themes were defined and named more appropriately to the unified ideas the codes under them conveyed. The names labeled were based on the general idea that they posed under each research question.
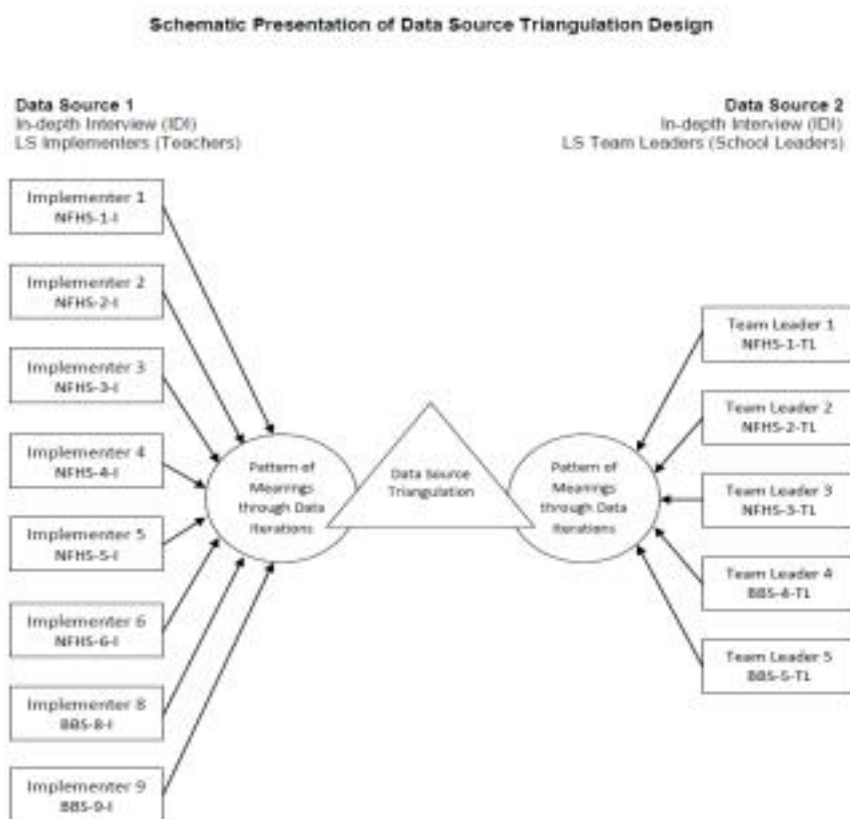
6. Writing up | This final phase involves weaving together the analytic narrative and data extracts, and contextualizing the analysis in relation to existing literature. At this phase, data derived from two iterations were made as bases for writing the report. The flow of ideas generated from the themes formed the story that answered the research questions. In addition, contextualization of the analysis was reinforced with the inclusion of corroborating studies covered in the review of related studies.

The above cited data analysis used in this study was sourced from the guidelines for reviewers and editors evaluating thematic analysis manuscripts by Braun and Clarke (2019).

Data Source Triangulation

The datasets gathered from participants or Source 1 (LS Implementers) and key informants or Source 2 (LS Team Leaders) were triangulated. The purpose of the triangulation, particularly for a case study, is as a strategy (test) for enhancing the validity and reliability of research or assessment of results (Mathison (1988) where researchers 'seeks for convergence among numerous and distinct sources of information to form themes or categories in a study" (Creswell & Miller, 2000, p. 126), all cited in Kaman and Othman (2016).

The schematic presentation of data source triangulation design used is given below.

Schematic Presentation of Data Source Triangulation Design

Data Source 1
In-depth Interview (IDI)
LS Implementers (Teachers)

Data Source 2
In-depth Interview (IDI)
LS Team Leaders (School Leaders)

Implementer 1 NFHS-1-I
Implementer 2 NFHS-2-I
Implementer 3 NFHS-3-I
Implementer 4 NFHS-4-I
Implementer 5 NFHS-5-I
Implementer 6 NFHS-6-I
Implementer 8 BBS-8-I
Implementer 9 BBS-9-I

Pattern of Meanings through Data Iterations

Data Source Triangulation

Pattern of Meanings through Data Iterations

Team Leader 1 NFHS-1-TL
Team Leader 2 NFHS-2-TL
Team Leader 3 NFHS-3-TL
Team Leader 4 BBS-8-TL
Team Leader 5 BBS-5-TL

Role of the researcher regarding bias, credibility, and transferability of findings

After the recorded interviews had been transcribed, the researcher re-viewed and re-listened to the recordings to verify the content accuracy of the transcribed data. In addition, the researcher consulted resources and dissertation adviser throughout the evolution of this study. The suggestions and comments of the dissertation panel have also been incorporated into the manuscript. The datasets were coded and themes were generated using Quirkos, a licensed version of qualitative data software analyzer for a faster and more organized coding and generation of themes. Lastly, the researcher included ample and relevant quotes or data extracts from participants to substantiate the findings of the study (Maxwell, 2005).

Sources of Information

Population

This study had the secondary school teachers and school leaders who have actually conducted Lesson Study from a public high school in Quezon City, Philippines and from a private high school in Jakarta, Indonesia.

Sample Size

There are no rules for sample size in qualitative inquiry. Sample size depends on what the researcher wants to know, the purpose of the inquiry, what's at stake, what will be useful, what will have credibility, and what can be done with available time and resources (Patton, 1990).

In this study, the researcher secured permission to conduct interview of the participants from the high school teachers and school heads from public and private secondary schools who have actually conducted a lesson study for a minimum of one academic year as basic criteria to meet the requirements of having participants who have had the experience in doing reflections on lesson study. The researcher had the following number of participants in each kind of data collection method:

Semi-structured one-on-one in-depth interview with nine (8) LS teacher-implementers for 45 minutes to 1 hour each interview; and, Semi-structured one-on-one in-depth interview with four (5) school heads for 45 minutes to 1 hour each interview.

A total of 13 participants were interviewed for the study.

The in-depth interview profile (maximum variation sampling) of the participants and key informants have the following determining factors: (a) school affiliated to (public or private), (b) designation, (c) subject handled (Math, Science), (d) academic year Lesson Study was conducted or years they have been doing LS (minimum of one year doing full LS cycle, and (e) gender.

The table below presents the profile of the participants who were interviewed for the study.

Table 1. Profile of Participants

Participant	Gender	Affiliated School	Designation	Subject Handled	Academic Year LS Conducted	Subject Taught
NFHS-1-I	Female	North Fairview HS	TIII	Science	2014-2019	Science
NFHS-2-I	Female	North Fairview HS	TI	Science	2019-2020	Science
NFHS-3-I	Female	North Fairview HS	TI	Science	2019-2020	Science
NFHS-4-I	Male	North Fairview HS	TII	Science	2019-2020	Science
NFHS-5-I	Female	North Fairview HS	TIII	Science	2019-2020	Science
NFHS-6-I	Female	North Fairview HS	TI	Science	2019-2020	Science
BBS-7-I	Female	Bina Bangsa School	Teacher	Math	2018-2020	Math
BBS-8-I	Female	Bina Bangsa School	Teacher	Math	2018-2020	Math

Table 2. Profile of Key Informants

Key Informant	Gender	Affiliated School	Designation	Subject Handled	Academic Year LS Conducted	Subject Taught
NFHS-1-TL	Female	North Fairview HS	TIII	Science	2014-2019	Science
NFHS-2-TL	Female	North Fairview HS	TII	Science	2016-2019	Science
NFHS-3-TL	Male	North Fairview HS	HT VI	Science	2010-2020	Science
BBS-4-TL	Male	Bina Bangsa School	Teacher	Math	2017-2020	Math
BBS-5-TL	Male	Bina Bangsa School	Teacher	Math	2017-2020	Math

The tables above show the total number of study participants, 13 in all. Eight (8) of them were teachers and five (5) were teachers and year level coordinators, and a head of department. Nine (9) of them were females and four (4) were males. Although the minimum requirement for this study was for the participant to have a one (1) year of experience doing full cycles of Lesson Study, some have been doing LS for two or more years already. The participants handled either Science or Math subjects. Nine (9) of them were connected to a public national high school in Quezon City, Philippines, the North Fairview High School, and the other four (4) were Overseas Filipino Workers (OFWs) working as high school teachers in the secondary department of Bina Bangsa School, one of the international schools in Jakarta, Indonesia. All of them gave consent to be interviewed for the study.

Sampling Technique

The sampling technique used in this study was purposive sampling, particularly maximum variation sampling. The logic and power of purposeful sampling lies in selecting in formation-rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research, thus the term purposeful sampling (Patton, 1990).

Maximum variation sampling aims at capturing and describing the central themes or principal outcomes that cut across a great deal of participant or program variation. Maximum variation sampling selects a wide range of variation on dimensions of interest. The purpose is to uncover central themes, core elements, and/or shared dimensions that cut across a diverse sample while at the same time offering the opportunity to document unique or diverse variations. (study notes by Dr. Bonnie Nastasi, Director of School Psychology Program)

Purposive sample is not representative but a maximum variation sample aims to be in certain situations more representative than a random sample. The principle of the maximum diversity

- is an extension of the statistical principle of regression towards the mean based on which instead of seeking representativeness through equal probability, it is sought by including a wide range of extremes:"if a group of people is (on average) extreme in some way, it will contain some people who themselves are average". (Vitcu, et.al., 2007).

Only those teachers and school heads who have actually participated and conducted a lesson study for a minimum of one academic year were chosen as participants in this study.

Instrumentation

This study employed semi-structured one-on-one interview with secondary school teachers and school leaders who actually had conducted and/or led lesson study in their departments. The researcher used an interview guide. The interview guide contained three general questions which were crafted based on the main problem of this study. Since this was a semi-structured interview, the researcher made follow up questions when deemed necessary. The three general questions centered on: a) teachers' perspectives on lesson reflection in a Lesson Study context, b) effect of lesson reflection on instruction, and c) teachers and school leaders' perspectives on lesson reflection through Lesson Study in meeting desired learning outcomes.

Ethical Considerations

A letter asking permission from the principal of the national high school in Quezon City and an electronic permission for the participants from abroad were sent to formally conduct with their consent the one-on-one in-depth interview with the participants. It was during receipt of their consent to be interviewed that the participants were individually scheduled for a Zoom interview. The interview was conducted online because of face-to-face restrictions put in place due to the COVID-19 virus spread.

4. Results and Discussion

The analysis of results below covers a description of both the semantic and latent meanings of data extracts (Kiger and Varpio, 2020) in illustrating meanings derived from analysis of datasets. It is important to identify whether the meaning offered in presented extract illustrates the semantic or latent (Byrne, 2021) meaning of themes. This study, employing reflexive thematic analysis by Braun and Clarke (2019), delves and weaves through patterns of meanings iteratively to capture and interpretatively develop relatable themes serving as insights to address the research questions using the researcher's lens.

The ideas reflected in presented thematic maps are the results of the data source triangulation to capture the encompassing and encapsulating converging patterns of thoughts and ideas which are substantially reflective of the perspectives of Lesson Study implementers (participants) and team leaders (key informants) about the role of lesson reflection in meeting desired students' learning outcomes more meaningfully.

1. Teachers and School Leaders' Perspectives on Lesson Reflection in the Context of Lesson Study

1. 1 Coding using research question 1 as anchor code

Participants – LS Implementers (First Iteration)

> " Nakikita ko dito kung saan pa pwede i-improve ang way of teaching ko as an educator.. tsaka nakikita ko din yung mga lapses ko, halimbawa sa time management nagsielf-rireflect din ako..tsaka nakikita ko rin kung paani ko mas matutulungan ang mga bata in the best way that I can..
>
> Source: 5_NFHS-5-I

> " Mas pinagtutuunan ko ng pansin yung response ng bata dun sa question na ibinato ng implementer..nagmumunimuni aku kung paano ba nag-react yung student, kung tama ba yung question, kung I can suggest anything para ma-improve or kung i-as ease nalang kung ok yung reaction nung student..
>
> Source: 5_NFHS-5-I

> " Masasabi ko na mgnada ang lesson study kahit observer lang ako ksi that time balitang-balita yung tinatawag na 'The Big One'..that lesson gave an idea to the students na ang earthquake pala ay hindi biro at na ang mga estudyante ay maging prepared not only in their schools but also in their house..kasi ang mga students naming ay nasa low lying area or nasa fault lines kaya nalaman nila na , ah nasa delikado pla kaming area..tuwang tuwa ako ksi nalaman ng mga bata yung klase ng tirahan nila na dati, di nila alam yung fault line..
>
> Source: 6_NFHS-6-I

Q1 - Generated Themes

■ improvement of the lesson plan

■ used to assess 'how' the students' behaved, reacted, participated in the conduct of lesson

■ a sub-theme of ■■■ to recognise the students' discovery of their own reflection of their performance

Participants – LS Implementers (Second Iteration)

> " Sa paggaw ng lesson, naa-identify naming kagad kung ano yung dpat na palitan dun sa lesson..kasi yun ang unang nagiging sentro n gaming discussion..like, dun bas a ilicit, or sa engage ba..or sa evaluation.. then kung ano yung problem dun kami mag rerevise..
>
> Source: NFHS-4-I

> " Usually kasi sa first implementer andun kasi tlaga yung bigat..yung kaba, kumbaga sya yung nagiging trial and error ng lahat..so usually tlga, hindi tlaga perfect (sa first implementation)..may mga panahon na hindi kami nkakapag anticipate ng output, at nagugulat nlang kami, 'ay pwede pla to'..pero meron din namang kung ano yung nilagay naming sa lesson plan naa-achiev talaga naming.
>
> Source: NFHS-4-I

> " It allows us teachers to ask what went well, and it also develops our confidence in displaying our knowledge to the students..
>
> Source: NFHS-4-I

■ realization of newly acquired teaching skills
■ establish students' ability

Q1 - Generated Themes

■ improvement of the lesson plan / instruction / lesson delivery

■ used to assess 'how' the students' behaved, reacted, participated in the conduct of lesson

■ a sub-theme of ■■■ to recognise the students' discovery of their own reflection of their performance

Key Informants – LS Team Leaders (First Iteration)

Key Informants – LS Team Leaders (Second Iteration

Summary of Iterations for Question 1 including a third one (BEFORE Triangulation)

| 1st Iteration →	2nd Iteration →	3rd Iteration THEMES (Latent)	3rd Iteration THEMES (Latent)	←2nd Iteration	← 1st Iteration
Q1 idea about lesson reflection in a lesson study				Q1 idea about lesson reflection in a lesson study	
improvement of the lesson plan	improvement of the lesson plan, instruction, and lesson delivery sub-themes: - realization of newly acquired teaching skills - establishes students' abilities	Improvement of lesson plan Improvement of instruction Improvement of lesson delivery • realization of new teaching skills • establishment of students' learning abilities	Teachers collaboration for lesson improvement Teachers collaboration for students' to better understand the lesson • a way for teachers to grow professionally	collaboration of teachers for lesson improvement and students' better understanding of the lesson sub-theme: a way for teachers to grow professionally	collaboration of teachers for lesson improvement and students' better understanding of the lesson sub-theme: a way for teachers to grow professionally
used to assess how the students behaved, reacted, participated in the conduct of lesson	used to assess how the students behaved, reacted, participated in the conduct of lesson	Used to observe students' behavior Used to observe students' reactions Used to observe students' participation			
io recognize the students discovery of their own reflection of their own performance	to recognize the students discovery and reflection of their own performance	Allows students to discover learning Allows students to reflect on their learning			

Realized Themes AFTER Data Source Triangulation

3ʳᵈ Iteration THEMES (Latent)	Realized Themes After Data Source Triangulation	3ʳᵈ Iteration THEMES (Latent)
Q1. How do teachers and school leaders perceive lesson reflection in a lesson study?		Q1. How do teachers and school leaders perceive lesson reflection in a lesson study?
Improvement of lesson plan Improvement of instruction Improvement of lesson delivery • realization of new teaching skills • establishment of students' learning abilities Used to observe students' behavior Used to observe students' reactions Used to observe students' participation Allows students to discover learning Allows students to reflect on their learning	1. For lesson delivery improvement 1.1 Used to observe students' behavior, reactions and participation 2. For students to better understand the lesson or instruction 2.1 Allows students to discover learning 2.2 Allows students to reflect on their own learning 3. For lesson plan improvement 4. For teachers to grow professionally	Teachers collaboration for lesson improvement Teachers collaboration for students' to better understand the lesson • a way for teachers to grow professionally
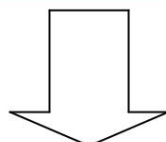
Thematic Map 1 – Teachers and school leaders' perspectives on lesson reflection in a Lesson Study.
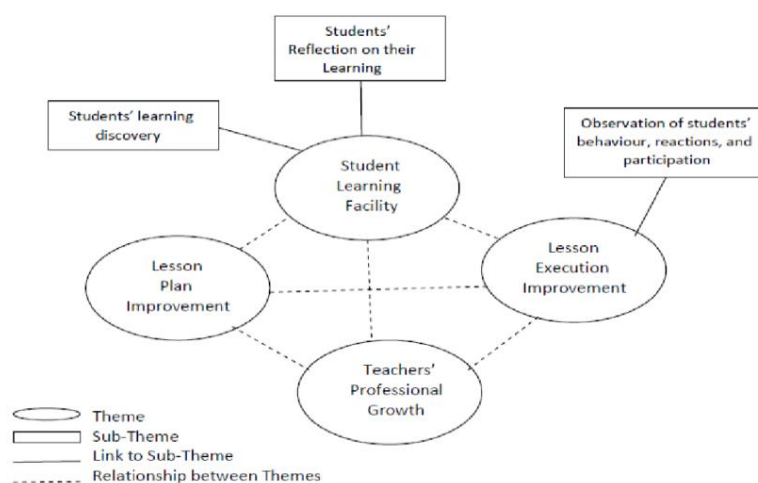
The results for question one are presented in the thematic map above. The findings for the first question revealed that teachers and school leaders' perspectives about lesson reflection conducted in the context of Lesson Study (LS) are anchored on four developed themes from the data, namely: (a) improved lesson preparations, (b) improvement in lesson execution, (c) student learning facility, and (d) teachers' professional growth. These four themes are interrelated, and although not being all equal in extent and consideration in their interconnectivity, it is worth-noting that one cannot be set apart from the rest. They all contribute in the cyclical essence of Lesson Study particularly on the role of lesson reflection. This conforms with the study of Gutierez (2015) citing that through Lesson Study teachers find the opportunity to provide insightful reflections on their instructional practices. More particularly, improved lesson preparations is corroborative to the study of Ebaeguin (2015) in claiming that through LS teachers appreciate working among their colleagues through collaborative lesson planning.

It is quite remarkable that, in this study, lesson reflection is seen by Lesson Study (LS) implementers and team leaders alike as an important element of teaching that bears benefits gearing more towards the execution of a lesson than on the preparation of it. The researcher

observes so because understandably, teaching starts from lesson planning and the processes which could be linked to students' learning emanate from the lesson plan, and the preparations made for such plan. The gearing of benefits more towards the execution of a lesson as surfaced in this study is confirmatory to the study of Ikzan and Rahim (2017) when the analysis of their data revealed that the majority of their participants were able to give suggestions for improvement of future teaching and learning. Similarly, the work of Giarmo-Ballard & Hyatt (2012) reinforces the inseparability of improved lesson preparations, improvement in lesson execution, and student learning facility when according to them teachers evaluating their own teaching through reflective strategies provide them with the information with which to improve their pedagogy and increase student learning.

Of the four themes that were observed for subtopic one, improvement in lesson execution surfaced as the most dominant one. Reflection via LS enabled a better lesson execution or delivery by the implementers. This concept is further stretched into three sub-themes where lesson reflection was more specifically perceived as an active repository to revisit students' (a) behavior in class, (b) reactions to the lesson processes conducted, and (c) level of participations in class. The following data extract from one of the implementers illustrates how such observation is manifested:

> 'I focus more on the answer of the student to the implementer's question..I ponder on the student's reaction, whether the question was asked correctly, whether I could suggest anything to improve it, or to just let the question be if the student's reaction was acceptable...' (NFHS-5-I)

In this case, the study participants see lesson reflection as an indispensable mechanism of teaching if there is a genuine desire from the teachers to see their students capture the substance of the lesson using in part student's observable behavior during the conduct of lesson and the teacher's own interpretative lens. This affirms the study of Sinno (2016) in claiming that reflective teaching provides valuable insights into teaching and allows teachers to monitor their students' progress and deepen the teachers' understanding of classroom events.

The respondents' putting more weight on lesson execution or delivery over its preparation which was dominantly narrated in the respondents' reply to research question one could be attributed to how they value feedbacks and observations provided by every teacher-implementer at the end of every conducted lesson. This corroborates the study of Disu (2017) saying that participants value this practice because they are able to discuss areas in need of improvement as well as the strength in the delivery of their lesson. In LS, feedbacks and observations are put into writing to put substance to a revised lesson plan which will then be used as basis by the next lesson implementer. In this context, lesson preparation takes observation feedbacks as major component in the creation of a new plan. This interpretation can be expounded in the work of Kerbelye (2018) as it 'illuminates potential directions for change' towards teacher development, and in effect, a better prepared lesson.

In the current study, LS implementers and team leaders have already gone beyond the idea of 'prepare first, execute next' in teaching. Here, the very first lesson preparation is taken as a pre-requisite for a more meaningful planning after observations and feedbacks have been put

together for the next lesson preparation, the revised plan. It must be noted that the revised plan is technically put to test in the next implementation to give way whether the latest preparation and execution of lesson carried definable improvements; thus, LS implementers look forward and value that part of the LS cycle. This perspective unveils an aspect of reflective teaching according to the experience of LS implementers and team leaders in this study, that aspect is the recognition of lesson reflection as a purpose driven mechanism that sets initial course to the lesson and generates meaning to whatever happens after the lesson is delivered.

Moreover, reflection becomes imperative as it is difficult to predict what might transpire in the actual teaching process. For it is through reflection that a LS implementer can make sense of what happened before, during, and after each lesson. The events during these periods are taken into consideration paving the way for a more improved lesson preparation where implementers' anticipations of students' would-be responses are validated through observation and are therefore included in the lesson planning. As one of the implementers said:

> 'Lesson reflection is very important because no matter how much preparation teachers do, what happens in the actual remains different..it is where students' problems would come out..questions that teachers would not expect in the process..' (NFHS-3-I)

It is important that to make sense of lesson reflection, teachers have to anticipate verified changes conducted by one implementer and to be followed through by another. Yet, these changes or modifications of lessons and are carried out in a series become proactively realistic only if the implementers themselves get to observe those scenarios where the reference for intended change is derived.

The following data extract relates to the importance of a necessary change in lesson execution:

> 'You will see the moment you sit down for a discussion of it, you can say, yes..it would have been better and the students would have gotten it correctly if a figure was presented when we asked the questions..things like that..where the easier way for the students to understand the lesson would happen only if there is reflection done after...' (BBS-4-TL)

Moreover, lesson reflection is also seen as means for students to better understand the lesson or instruction. Accordingly, it provides the channel for the students to grasp more understanding of the lesson. Within this concept, the students are able to discover learning. Also, the use of lesson reflection provides a way for the students to reflect on their own learning. In the data extracts below, one of the LS team leaders and one from the implementers cited that:

> 'Lesson reflection is useful for us because through it we are able to identify ways whereby students respond to the lesson better..or, specify an approach that would make the students understand the lesson..' (NFHS-3-TL)

> 'They are able to realize learning because they can relate to the situation..whereas if they don't, the discussion simply becomes passive for them..' (NFHS-4-I)

Consequently, students' better understanding of the lesson comes as a result of improved lesson delivery. This provides an opportunity for them to learn on their own and take a sense of

ownership of their learning. This kind of experience allows the students to involve themselves in the learning process enabling them to reflect on their learning. The students' eventual reflection on their learning is an indication that they have experienced an intellectual breakthrough that they could now look back and consciously process how much learning they have attained at the time and to what extent they have improved so far through personal reflection.

Furthermore, another item to remember here is that lesson reflection when done within the context of LS is seen as means to improve lesson preparations. The lesson improvement here finds new ways to approach the lesson based on observer's sharing of ideas as to what went well and what went wrong in the conduct of lesson. This is expounded by the following data extract from one of the implementers:

> 'In preparing the lesson, we can readily identify which part needs to be changed.. because lesson improvement comes as our main concern in the discussion.. like, whether there is a need to change the elicit part, or the engagement part.. the evaluation.. then we start doing lesson modifications after identifying which part needs changing...' (NFHS-2-I)

Another perspective that came out talked about teachers' professional growth. Doing reflection within the scope and context of LS serves as a vehicle for teacher-implementers to grow professionally for the benefit of the students. This is highlighted by one of the implementers saying:

> 'Through it I am able to identify areas that need improvement in my way of teaching.. I also see my lapses.. example, in the area of time management.. I do self-reflection to aid me on how I can further help the students in the best way I can..' (NFHS-5-I)

The cyclical nature of Lesson Study re-introduces the importance of lesson planning and necessitates revisions thereof for improvement. This affirms the study of Ono et al., (2011) citing that when lessons are refined via lesson reflection, improvements are made. In this context, the content of the lesson plan is entirely dependent on what went well and what went wrong in the course of repetitive lesson revisions. It is through this exercise that teacher-implementers gain additional skills and knowledge in teaching making them grow professionally. This professional growth inspires teachers to focus on student growth and learning (Ylonen & Norwich, 2012). And enable teachers to develop and study their own teaching practices and shed light on the local theories of education (Pjanic, 2014).

2. Effects of Lesson Reflection on Instruction.

2.1 Coding using research question 2 as anchor code Participants – LS Implementers (First Iteration)

> kumbaga, ay naku, baka itanong ito sakin ng bata, ready ako dyan..so eto na, nka-design nko ng activity para dyan..so nakita nya na eh, na-observe nya na yung first cycle up to the last cycle, so nkadesign na ng lesson plan na magfi-fit dun sa mga expected o iniexpect na mga magiging reaction ng bata sa lesson..kaya yung evaluation, talaga nmang may progress pagdating sa dulo..

Source: NFHS-3-I

> yung focus nmin talaga ay yung kung nahirapan ba yung bata dun sa activity o hindi.or kung nahirapan siya, then kelangan mkapag-revise kami ng activity na kahit mahirap yung concept makakaparticipate pa rin cya..

Source: NFHS-3-I

> Yung activity mismo, (Me; Base sa reaction nng bata?), Nieves: Yes, nahirapan ba sila sa question..? minsan kasi, bakit kaya hindi nakasagot yung estudyante..baka naman merong something wrong sa question na kailangan naming irevise..so yun, tapos ichi-check ng supervisor o head teacher kung tama ba ang pagkaka-construct..

Source: NFHS-3-I

Q2 - Generated Themes

- impact of reflection on the teachers
- impact of reflection on the students

Participants – LS Implementers (Second Iteration)

> Nakikita ko dito kung saan pa pwede i-improve ang way of teaching ko as an educator.. tsaka nakikita ko din yung mga lapses ko, halimbawa sa time management nagsielf-rireflect din ako..tsaka nakikita ko rin kung paani ko mas matutulungan ang mga bata in the best way that I can..

Source: 5_NFHS-5-I

> Mas pinagtutuunan ko ng pansin yung response ng bata dun sa question na ibinato ng implementer..nagmumunimuni aku kung paano ba nag-react yung student, kung tama ba yung question. kung I can suggest anything para ma-improve or kung i-as ease nalang kung ok yung reaction nung student..

Source: 5_NFHS-5-I

> Masasabi ko na mgnada ang lesson study kahit observer lang ako ksi that time balitang-balita yung tinatawag na 'The Big One'..that lesson gave an idea to the students na ang earthquake pala ay hindi biro at na ang mga estudyante ay maging prepared not only in their schools but also in their house..kasi ang mga students naming ay nasa low lying area or nasa fault lines kaya nalaman nila na , ah nasa delikado pla kaming area..tuwang tuwa ako ksi nalaman ng mga bata yung klase ng tirahan nila na dati, di nila alam yung fault line..

Source: 6_NFHS-6-I

> Hindi, hindi namn yung topic ang ibinabalik sa mga bata, kundi ang panibagong style or way of delivering the lesson kung saan mas madaming nagparticipate yung mga bata..or mas maraming mga namotivate sa discussion..yung ganung mga ways of teaching ang inaapply naming dun sa panibagong topic..yung skills na nakuha naming dun sa 3rd cycle inaapply na naming sa pangkaraniwang discussion..

Source: 6_NFHS-6-I

Key Informants – LS Team Leaders (First Iteration)

> We based it on the students' engagement and reactions, including facial expressions during sa presentation ng lesson na ni-revised..we also based it on their responses..tsaka after ng lesson study, during sa sharing ng feedback, dun naisi-share na yung dati nilang student na hindi sumasagot at nung mag lesson study, eto sumagot na..meron ding nung nag lesson study na ay mas naengganyo silang sumagot..at nakikita mo yung mga 'wow' moments nung bata during the implementation ng lesson..may instances din na namamangha yung estudyante sa ginawa nung teacher ganung ordinarily wla nman syang ganung reaction..kaya yun ang mga reasons na hindi naming inaalis ang lesson study..

Source: NFHS-3-TL

Q2 Generated Themes

▭ impact on teachers: lesson becomes more executable with materials and procedures closely aligned to the students' needs

▭ impact on students: learning by doing, making learning discoveries, and aiding learning thru students' exploration on the subject matter

> Sa experience naming, nag-i-scaffold yung learning nung mga bata..kaya nagkakaron kami ng agreement na, ok, since nagamit na natin ang lesson plan na ito, (yung final stage na), sa next school year ito na ang gagamitin naming lesson plan kasi tested na ito, ito na yung ipapagamit natin.. at makikita naming na pag inmplement na yung plan at merong bahagi na parang hindi nagging effective, magfifeedbacking kami ulit para i-improve pa ang lesson nay un..

Source: NFHS-3-TL

Key Informants – LS Team Leaders (Second Iteration)

> We based it on the students' engagement and reactions, including facial expressions during sa presentation ng lesson na ni-revised..we also based it on their responses..tsaka after ng lesson study, during sa sharing ng feedback, dun naisi-share na yung dati nilang student na hindi sumasagot at nung mag lesson study, eto sumagot na..meron ding nung nag lesson study na ay mas naengganyo silang sumagot..at nakikita mo yung mga 'wow' moments nung bata during the implementation ng lesson..may instances din na namamangha yung estudyante sa ginawa nung teacher ganung ordinarily wla nman syang ganung reaction..kaya yun ang mga reasons na hindi naming inaalis ang lesson study..

Source: NFHS-3-TL

so much time is spent in preparing, evaluating, and upgrading the lesson

Q2 Generated Themes

aids the teachers in understanding the students' learning abilities

▭ impact on teachers: lesson becomes more executable with materials and procedures closely aligned to the students' needs

▭ impact on students: learning by doing, making learning discoveries, and aiding learning thru students' exploration on the subject matter

students are grouped in a mix of better and slower learners

Q3 Generated Themes

> Sa experience naming, nag-i-scaffold yung learning nung mga bata..kaya nagkakaron kami ng agreement na, ok, since nagamit na natin ang lesson plan na ito, (yung final stage na), sa next school year ito na ang gagamitin naming lesson plan kasi tested na ito, ito na yung ipapagamit natin.. at makikita naming na pag inmplement na yung plan at merong bahagi na parang hindi nagging effective, magfifeedbacking kami ulit para i-improve pa ang lesson nay un..

Source: NFHS-3-TL

> Dun namn sa mga below sea leavel na mga students, gini-group nmin sila tapos sinasamahan naming dun sa groupings ng marunong runong at sila yung nagsisilbing facilitator, na team leader nung group..kinokonsider din nmin yung sa peer-learning kaya ganun yung approach naming, kasi may time na kung sila-sila lang ang mag-uusap, eh, may makukuha din silang ano, sa level lang din nila..

Source: NFHS-3-TL

Summary of Iterations for Question 2 including a third one (BEFORE Triangulation)
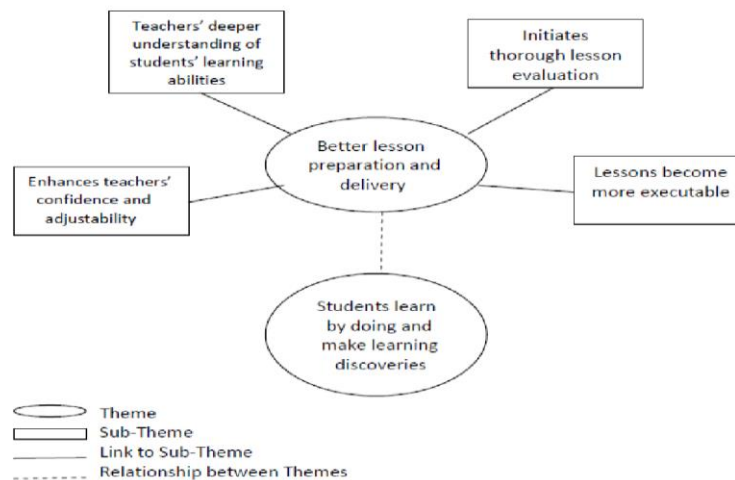
		on their learning			
Q2 role of lesson reflection in lesson study execution				Q2 role of lesson reflection in lesson study execution	
Impact of reflection on the teachers	Impact of reflection on the teachers sub-themes: - understand students' learning abilities - develop teachers' preparedness - enhances teachers' adjustability	Teachers understand students' learning abilities Teachers develop preparedness in lesson delivery Enhances teachers' adjustability	Lesson becomes more executable Learning materials are aligned to students' needs Procedures in lesson execution are aligned to the students' needs • So much time spent in preparing the lesson • So much time	impact on teachers: lesson becomes more executable with materials and procedures closely aligned to students' needs sub-themes: - so much time is spent in preparing, evaluating, and upgrading the lesson - aids the teachers in understanding the students' learning abilities	impact on teachers: lesson becomes more executable with materials and procedures closely aligned to students' needs

			spent in evaluating the lesson • So much time spent in understanding students' learning abilities		
Impact of reflection on the students	Impact of reflection on the students sub-themes: - builds student confidence through peer interaction - builds student interest on the lesson		Students learn by doing Students make learning discoveries Aids learning through students' exploration on the subject matter • Students are grouped in a mix of better and slower learners	impact on students: learning by doing, making learning discoveries, and aiding learning thru students' exploration on the subject matter sub-theme: students are grouped in a mix of better and slower learners	impact on students: learning by doing, making learning discoveries, and aiding learning thru students' exploration on the subject matter

Realized Themes AFTER Data Source Triangulation

Allows students to reflect on their learning		
Q2. How does lesson reflection through lesson study affect instructions?		Q2. How does lesson reflection through lesson study affect instructions?
Teachers understand students' learning abilities Teachers develop preparedness in lesson delivery Enhances teachers' adjustability	1. Better lesson preparations and delivery 1.1 Enhances teachers' confidence and adjustability 1.2 Deeper understanding of students' learning abilities by the teachers 1.3 Initiates thorough lesson evaluation 1.4 Lessons become more executable 2. Students learn by doing and make learning discoveries	Lesson becomes more executable Learning materials are aligned to students' needs Procedures in lesson execution are aligned to the students' needs • So much time spent in preparing the lesson • So much time spent in evaluating the lesson • So much time spent in understanding students' learning abilities Students learn by doing Students make learning discoveries Aids learning through students' exploration on the subject matter • Students are grouped in a mix of better and slower learners
Q3. What are teachers and school leaders		Q3. What are teachers and school leaders

Thematic Map 2 – How lesson reflection through Lesson Study affects instruction.

Theme
Sub-Theme
Link to Sub-Theme
Relationship between Themes

The results for subproblem two are presented in the thematic map above. The findings in the second subproblem revealed that lesson reflection affects instruction mainly in two areas

according to the participants and key informants. These two areas are on (1) lesson preparation and delivery, and (2) learning by doing and making learning discoveries.

Under lesson preparation and delivery, reflection allows a continuous process of checking and rechecking of how the lesson was prepared and how it was implemented. This process commences from the time the implementers craft the initial lesson plan for LS and record observations that happen as it is executed by the first implementer and followed through by another. As a result, the revised plan reflects an almost comprehensive guide, where one revision is outdone by the next, to achieve student learning every after each lesson execution by the implementers as lesson plan is modified and applied from one class to another. This is exemplified by the following data extracts:

> 'After the lesson, we give our feedback, citing the advantage or disadvantage of the method we used in my case, lesson reflection happens as I conduct the lesson and the rest of the observations are shared by the team then we consolidate all of our observations..' (BBS-5-TL)

> 'It serves as our guide on how we believe the lesson would unfold before, my mindset about teaching was that whatever is written on the lesson plan is everything there is to happen but I realized that not everything we planned actually happens so lesson reflection becomes a guide in the execution of lesson..' (NFHS-6-I)

The prominence of better lesson preparations and delivery comes as no surprise in this particular study. The Lesson Study implementers and team leaders are consistent in their position at seeing the influence of lesson reflection toward better lesson execution. This perspective is widely manifested across data sets where lesson reflection's role on positively affecting instruction is highly notable.

Under the first main area, four sub-themes on how lesson reflection affects learning came out, namely: (a) enhances teachers' confidence and adjustability, (b) deeper understanding of students' learning abilities by the teachers, (c) initiates a thorough lesson evaluation, and (d) lessons become more executable.

On the enhancement of teachers' confidence and adjustability, the following data extract underscores it as:

> 'With the continued revision of the lesson plan up to the last implementer, students' evaluation also progresses..for example I am the first implementer and I am not ready to answer students' questions, the implementer after me would observe that limitation in my teaching and would prepare answers for those questions should they re-surface..and same observation is undertaken by other implementers until their turn to teach comes..' (NFHS-3-I)

Lesson reflection here fuels teachers varied strategies and approaches as needed by the students based on lesson observations. This finding corroborates the study of Giaimo-Ballard & Hyatt (2012) citing that teachers evaluation of their own teaching through reflective strategies assists them in analyzing their teaching approaches and the effectiveness of their strategies to improve

their pedagogy and increase student learning. This also supports the study of Bada (2015) citing that teachers need to reflect on their practice in order to apply these ideas to their work.

The enhancement of teachers' confidence and adjustability emanate from their observations of previous LS implementations prompting them to be ready with answers to questions the students may be asking them, questions that were asked in earlier delivery of the lesson. This preparation builds more confidence on the teachers as LS implementation continues its cycle.

On deeper understanding of students' learning abilities by the teachers, the following data extract from one of the implementers underscores it by saying:

> 'Our focus is on the students, not on the implementer..lesson reflection is directed on how the lesson is delivered, the identification of more effective strategies..and finding out what materials to use to facilitate student learning..' (NFHS-1-TL)

> 'We have three cycles, and before the last cycle is reached, we make sure that the students have already achieved the application level of learning..though there are students who may not at all go beyond the comprehension level, we would not worry about it anymore as that is one reality that we have to accept..' (BBS-4-TL)

This consistency in perspective on the part of the LS implementers and team leaders paved an avenue to steadily construct varied but fitting learning activities for varied learners in the course of lesson execution. This is further affirmed in the study of Ikzan, Z.H. & Rahim, M.B. (2017) claiming that the appropriateness in the variation of activities undertaken and included in the planning and delivery of instruction by the teachers is justified to solve problems in the teaching and learning through lesson reflection. This allows a more engaging learning scenario for the students to enjoy.

Teachers find deeper understanding of students' learning abilities as implementers and observers alike put the weight of their observations on the students, and not on the teachers. With teacher's apprehension thinking that they probably are the ones being observed removed, the goal of finding more effective strategies to facilitate student learning is well-attended to.

On the aspect of lesson reflection working to initiate a thorough lesson evaluation, the following data extract expounds this aspect:

> 'Lesson reflection proved helpful because the student was able to do it correctly during my time..you would be able to see the difference in their performance from the start where it took time for them to process the lesson..and the change that occurred during the second implementation..more so on the third implementation..' (NFHS-7-1)

Lesson reflection works to initiate a thorough evaluation of the lesson and make necessary improvements thereof. Modifications on the lesson plan that truly aid student learning are affirmed when teachers see a remarkable change in the student's response to assigned activities.

On the aspect of lessons becoming more executable, the following extract from one of the team leaders explains it as:

> 'Teaching becomes lighter as the teacher simply acts as the facilitator..it's the student now who works his way to learn..because you are able to motivate him..so as facilitator, all you have to do is ask, and they will answer..the eagerness for them to learn becomes evident..' (NFHS-1-TL)

> 'Teaching the lesson becomes easier, and the students understand it more..unlike before, when the lesson seemed difficult for the students, there was a tendency for the teachers to just skip it..' (NFHS-1-TL)

Also, lessons become more executable as LS progresses. Teachers get to feel the role of being a facilitator of learning where the students become interestingly engrossed in working their ways to learn, with the teachers' guidance.

Still, regarding findings for question two, the results highlighted the aspect of teaching whereby reflection makes an impact on, that is, students learn by doing. This is supported by the following data extract:

> 'During group work, I make rounds first so I could hear students sharing their ideas with one another..so I give them time to discuss and find ways to do the activity on their own..and I observe good responses from them...' (BBS-8-I)

and make learning discoveries as illustrated by the following data extract:

> 'Students realize their mistakes and are able to solve problems by approaching the question or problem the way they understand it..they try something that may be different from the teacher's expectation but arrive at the correct answer just the same..' (BBS-5-TL)

This is one evidence that comes with learning by doing, that is, students are able to discover learning on their own way and/or with their peers. Learning by doing in this case is anchored on the students' experience in trying to answer the activity which enables them to discern critical features of learning (Lo, 2012, p.28). This experience spawns realizations and confidence that they could solve the problem according to how they approach it (Baclit & Coronado, 2014). This way of learning conforms with the theory of constructivism particularly that of John Dewey (1933) where he identified reflection as an element of learning on the part of the student, leading to a purposeful inquiry and problem resolution (Sinclair, 1998). In addition, the continued revisions of lessons alongside a more conscientious way of lesson delivery are afforded by variation theory which argues that the most effective way to help students understand a concept is to focus on providing opportunities for students to experience variation (Marton and Tsui, 2004), This variation helps students draw upon their personal experiences and discern learning from different perspectives (Cheng, 2016). Teachers' conduct of lesson reflection and creation of activities based on observations allow the blending of the theory of constructivism and theory of variation into a tangible opportunity and open the doors for students to discover learning and gain independence in their studies. This experience allows them to go beyond what is presented and further discover learning along the process.

3. Teachers and School Leaders' Perspectives on the Use of Reflection through Lesson Study in Meeting Desired Learning Outcomes

3.1 Coding using research question 3 as anchor code Participants – LS Implementers (First Iteration)

> yung pinakalast na yung nagbenefit kasi nasa kanya na yung changes, then possible andyan yung nag anticipate ka na kung magiging effective na yung activity..or yung changes na ginawa ng teacher..
>
> Source: *NFHS-4-I*

> Base sa reaction nung bata, halimbawa na-answer nya right away yung question..yung nakikita naming sa mata nya kung nakukuha nya kagad yung sagot parang nasi-sense ko na nakuha nya yung question, pero kung si implementer nag ask pa ng another question or as an observer naïf-feel naming yung frustration ng teacher na i-revise pa yung question, nasasabi naming na ah, there's a need na i-revise yung question kasi nahihirapan yung student..
>
> Source: *5_NFHS-5-I*

> Meron, kasi nga iba iba nman yung set of students, yung same na question na ok dun sa una ay dun s sumunod ay di nakuha kaagad..dahil yung sumunod na group ng students ay mas mahina mag catch ng questions..
>
> Source: *5_NFHS-5-I*

Q3 - Generated Themes
- improved student performance due to repeated revisions of lesson plan
- bridges learning thru teachers' anticipation based on what transpired in LS delivery
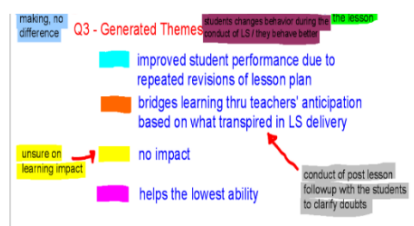- no impact
- helps the lowest ability

Participants – LS Implementers (Second Iteration)

> Base dun sa nagging experience naming, meron syang epekto, cguro in terms dun sa result ng quiz, dun nakita ko na yung iba na dati tinatamad na intindihin yung question, nung time na nung lesson study mas focused sila..
>
> Source: *NFHS-6-I*

> Yung results ng quiz nila ay halos ganun p din nman, pero yung mga nag-i-struggle ay yun yung mas natulungan dahil sa properly planned na mga activities, madali nilang naintindihan yung mga questions nung assessment.. tsaka marami rin namn akong nakitang points of improvement sa mga bata dahil sa lesson study..like yung mga nasa laylayan, naano na nila..umangat na sila..tapos nag improve yung result ng kanilang mga quizzes, tsaka yung mini-quizzes na pinapagawa ko sa klase..tapos nabawasan yung pagiging mahiyain nung ibang mga estudyante..
>
> Source: *NFHS-6-I*

making, no difference

students changes behavior during the lesson — conduct of LS / they behave better

Q3 - Generated Themes
- improved student performance due to repeated revisions of lesson plan
- bridges learning thru teachers' anticipation based on what transpired in LS delivery
- no impact — unsure on learning impact
- helps the lowest ability

conduct of post lesson followup with the students to clarify doubts

> " dun sa meeting ng team, sinishare ko nlang yung mga nagging feedback nung mga bata kasi, dun sa revisions ulit, dun sa third, dun na ulit yung evaluation..so dun sa mga previous na classes na ginawan ng lesson study ay nag open forum (with the students) nlang kami, kung bakit nahirapan sila sa question 1, question 2, para hindi namn ma-feel ng mga bata na hala, after i-observe n imam, o next lesson na tayo..kelangan merong pagpapaliwanag sa mga bata kung ano yung nagging resulta ng kanilang evaluation..

Source: NFHS-3-I

> " habang yung lesson plan ay narerefine up to the last, yung evaluation ng bata ay nagkakaron din ng progress kasi nga mula sa first implementer, halimbawa ako nga yung first implementer, hindi ako ready sa mga feedback ng bata, so cyempre si second implementor paghahandaan nya yun..paghahandaan nya yung mga problema na dumating dunsa first implementation, hanggang dun sa dulo kumbaga si teacher expected na, na eto yung..nakuha nya na yung mga feedback ng bata from first to fourth so yung fifthimplementation ready na si teacher

Source: NFHS-3-I

Key Informants – LS Team Leaders (First Iteration)

> " Samin sir, yung knowledge level ay given tlga na makukuha yun, at itinatawid naming hanggang dunsa comprehension..ngayon yung sa application, given na rin yung limitations ng mga bata, ginagawa naming yun to challenge yung mga really gifted.. we give certain questions that would separate those who are really good..kahit kasi sabihin mong nasa low ability yang mga yan, meron pa rin yang gifted, yung magagaling din kahit nasa ganyang silang class or section..

Source: BBS-4-TL

Q3 Generated Themes

- students learn by doing and interacting with peers through the learning activities provided to them after plan revisions
  - (sub-theme) also as reflected by the results of their formative assessments
- the weakest ones are able to improve in their performance, even if such improvement occurs in little amount
  - (sub-theme) the weakest ones find ways to attach themselves to the better performing ones through the process

> " Hindi man ganun kalaki o kataas ang nakikitang improvement ng mga low ability na napagcondakan ng lesson study, makikita mo pa rin talaga ang improvement.. ang lesson study ksi, ang ginagawa naming dyan ay we find ways to bridge the gap in learning ng mahihina kumpara dun sa medyo mabibilis..so makikita mo sa results ng IGCSE, makikita mo na bagamat mababa pa rin na results nakuha nila, pero mas mataas sa kung ano nagging performance nila bago pa gawin yung lesson study..mangilan-ngilan nlang yung mga batang nandun sa laylayan..they somehow managed to cope up, at least na-bridge nila yung gap, yung nakatawid sila, na they belong to a certain class..

Source: BBS-4-TL

> " Samin sir, yung knowledge level ay given tlga na makukuha yun, at itinatawid naming hanggang dunsa comprehension..ngayon yung sa application, given na rin yung limitations ng mga bata, ginagawa naming yun to challenge yung mga really gifted.. we give certain questions that would separate those who are really good..kahit kasi sabihin mong nasa low ability yang mga yan, meron pa rin yang gifted, yung magagaling din kahit nasa ganyang silang class or section..

Source: BBS-4-TL

Q3 Generated Themes

slower learners

- students learn by doing and interacting with peers through the learning activities provided to them after plan revisions
  - (sub-theme) also as reflected by the results of their formative assessments
- the weakest ones are able to improve in their performance, even if such improvement occurs in little amount
  - (sub-theme) the weakest ones find ways to attach themselves to the better performing ones through the process

> " Hindi man ganun kalaki o kataas ang nakikitang improvement ng mga low ability na napagcondakan ng lesson study, makikita mo pa rin talaga ang improvement.. ang lesson study ksi, ang ginagawa naming dyan ay we find ways to bridge the gap in learning ng mahihina kumpara dun sa medyo mabibilis..so makikita mo sa results ng IGCSE, makikita mo na bagamat mababa pa rin na results nakuha nila, pero mas mataas sa kung ano nagging performance nila bago pa gawin yung lesson study..mangilan-ngilan nlang yung mga batang nandun sa laylayan..they somehow managed to cope up, at least na-bridge nila yung gap, yung nakatawid sila, na they belong to a certain class..

Source: BBS-4-TL

Key Informants – LS Team Leaders (Second Iteration)

Summary of Iterations for Question 2 including a third one (BEFORE Triangulation)

3. role of lesson reflection in terms of students' learning outcomes			3. role of lesson reflection in terms of students' learning outcomes		
improved student performance due to repeated revisions of lesson plan	improved student performance due to repeated revisions of lesson plan	Repeated lesson plan revisions improve student performance	Students learn by doing Students learn by interacting with peers Students learn from improved learning activities Students improve in their performance based on the results of their formative assessments	students learn by doing and interacting with peers through the learning activities provided to them after plan revisions sub-theme: students learn as reflected by the results of their formative assessment	students learn by doing and interacting with peers through the learning activities provided to them after plan revisions sub-theme: students learn as reflected by the results of their formative assessment
bridges learning thru teachers' anticipation based on what has been observed	bridges learning thru teachers' anticipation based on what has been observed sub-theme: - conduct of post lesson follow up to clarify doubts	Bridges student learning through teachers' anticipations based on what has been observed • Following up with students after the lesson clarify doubts			
helps the lowest ability	helps the lowest ability	Helps students in the lowest group	The weakest students are able to improve in their performance The weakest students	the weakest ones are able to improve in their performance, even if such improvement occurs in little amount	the weakest ones are able to improve in their performance, even if such improvement occurs in little amount

|			improve in little amount The weakest students find ways to attach themselves to better performing ones Learning is bridged particularly to slow students	sub-theme: the weakest ones find ways to attach themselves to the better performing ones through the process	sub-theme: the weakest ones find ways to attach themselves to the better performing ones through the process
no impact	no impact sub-theme: - doubt on the impact of lesson reflection to improve student learning	No impact • Doubt on the impact of lesson reflection in improving student learning			

Realized Themes AFTER Data Source Triangulation

Q3. What are teachers and school leaders perspectives regarding the use of reflections through lesson study in meeting desired learning outcomes?		Q3. What are teachers and school leaders perspectives regarding the use of reflections through lesson study in meeting desired learning outcomes?

Repeated lesson plan revisions improve student performance
Bridges student learning through teachers' anticipations based on what has been observed
• Following up with students after the lesson clarify doubts
Helps students in the lowest group
No impact
• Doubt on the impact of lesson reflection in improving student learning
	1. Repeated lesson revisions improve students' performance
	  1.1 Students learn by doing
	  1.2 Students learn by interacting with peers
	2. Bridges student learning through teachers' anticipations based on observations
	3. Learning is bridged particularly to slow students
	4. Doubtful to no influence on student learning
		Students learn by doing
		Students learn by interacting with peers
		Students learn from improved learning activities
		Students improve in their performance based on the results of their formative assessments
		The weakest students are able to improve in their performance
		The weakest students improve in little amount
		The weakest students find ways to attach themselves to better performing ones
		Learning is bridged particularly to slow students

Thematic Map 3 – Teachers and school leaders' perspectives regarding the use of reflections through Lesson Study in meeting desired learning outcomes.
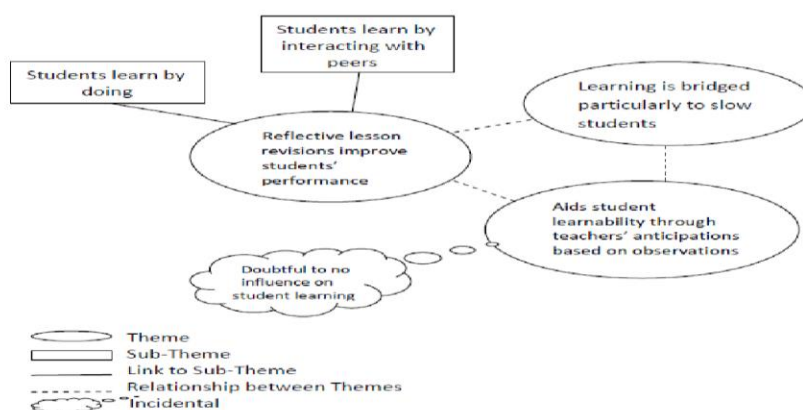
The results for question three are presented in the thematic map above. The findings for question three revealed that teachers and school leaders have the following perspectives about lesson reflection in meeting desired learning outcomes, namely: (1) repeated lesson revisions improve students' performance, (2) reflection bridges student learning through teachers' anticipations based on observations, (3) learning is bridged particularly to slow students, and incidentally, reflection carries doubtful to no influence on student learning.

Repeated lesson revisions improve students' performance as illustrated by the following data extract from one of the implementers:

> 'Changes occur in lesson delivery, student participation, the achievement or output from the activities..mistakes become less as lesson revisions take place..' (NFHS-4-I)

The repeated revisions of lesson plans after each conduct of Lesson Study (LS) based on feedbacks and observations of the implementers and team leaders led to improve students' performance. This is consistent with the dominant perspective that surfaced in research question two which is better lesson preparations and delivery. The role of lesson reflection here which is primarily accorded to improved students' performance underscores the indispensability of reflection in addressing needs of the students.

In addition, the first concept under these findings for subproblem three being that repeated lesson revisions improved students' performance has two sub-themes, namely:

(1) students learn by doing, and (2) students learn by interacting with friends.

These sub-themes support the study of Mendoza et al., (2019) citing that giving greater autonomy on the student during the learning process allows the students to learn by doing in a process of trial, error and correction in order to promote creative thinking while achieving meaningful learning.

The conversion of repeated lesson revisions to improved students' performance can be gleaned at the study of Mutarutinya (2020) claiming that there are positive impacts of Lesson Study towards the quality of teachers' competencies as well as students' academic achievement. Through a cyclical but reflective mode of lesson revisions, teachers are able to craft learning activities that suit the need of the students and fit their own way of understanding the lesson. Moreover, reflection bridges student learning through teachers' anticipations and observations as reflection conducted in a Lesson Study format is directed at a specific learning goal and that establishes a strong ground of purposive reflection. Furthermore, the benefit the slow students get from cyclical and purposive reflection serves as evidence to the principle behind constructivist teaching and the amplification of learning variations as underscored by variation theory where teachers design appropriate patterns of variation that help them discern the critical features and their relationships (Mun Ling, 2012) and where learners can work together in their pursuit of learning goals (Miller-First & Ballard, 2017).

This improvement in students' performance is functionally spelled out by highlighting that students learn by doing, as classically championed by Dewey (1930). This learning by doing takes place and is experienced within the sphere of learner interactions during the course of lesson delivery with the guidance and supervision of LS implementer. To put it more significantly, the physicist Freeman Dyson wrote that in doing science, he leaves the door open – 'up to a point you welcome being interrupted because it is only by interacting with other people that you get anything interesting done.' By allowing student interactions, verbalizing what the learner does while hearing or performing new tasks become a powerful learning tool (Marzano, 1998) and that interaction is a precursor between learning preferences and teaching methods towards learning achievement (Anggrawan, A., 2020).

During the course of these revisions, teacher-implementers are able to find ways that would enable student learning. These ways are the products of the different lesson observations that took place in the conduct of LS cycle. Also, LS implementers and team leaders agreed that with lesson reflection learning is bridged particularly to slow students as illuminated by the following data extracts:

> 'Students are of different abilities, but when we conduct the lesson, we always aim at those who belong to the lower ability… when we do lesson study, we find ways to bridge the gap between the slow ones and those who are able to manage learning better..so clearly, there is indeed an improvement..' (BBS-4-TL)

> 'It is through lesson reflection conducted in a lesson study that we are able to do something to at least elevate the slow ones even just a little bit and give them the sense of being with the group of better learners..and not just letting them remain isolated simply because thay are slow or weak..' (BBS-4-TL)

More specifically, the students who belong to the low ability benefit from the lesson reflection employed by the LS implementers. This is an occasion that may not be readily feasible in the course of regular class instructions outside LS, notwithstanding the remedial lessons given to these students. Through lesson reflection conducted in the context of LS, teacher-implementers are able to identify students' needs and the creation of activities that suit the needs of these students are crafted, implemented, and evaluated in relation to addressing those needs. It is through this exercise that learning is purposely bridged in the normal course of lesson delivery.

On a different perspective, this study noted an incidental observation that lesson reflection impressed a doubtful to no influence on student learning as cited by one of the implementers in the following data extracts:

> 'Ahmm, it helps somehow..for me, lesson study is 'ok' (showing doubtful facial expression)..sharing feedback about the lesson after it is conducted..it's just that..ahmm (trying to grope for a safe word to say)..what's the term again? (trying to be cautious)..it helps the students' learning because if there is a need for me to adjust, I would make the adjustment for them to learn..but then..(showing a doubtful facial expression again, and stopped answering)..' (BBS-8-I)

> 'Lesson study focuses on one specific objective only, and if a chapter test is conducted which includes the topic used in the LS among the set of topics given as the entire coverage, we could say that students may be able to answer questions for that particular LS topic, but it would be difficult to determine and conclude that their correct answers for the LS topic comprise as full determinant of their overall performance for the whole chapter…' (BBS-8-1)

In addition, the above observation though incidental, was sustained by a similar observation marking the students' unnatural behavior in class participation during LS as cited by one of the implementers in the following data extract:

> 'With the presence of observers, sometimes those who are shy tend to be more reserved and hesitate to raise their hands and participate because they don't want to give wrong answers and feel humiliated..they are ashamed of committing mistakes in front of the 'visitors'.. conversely, those who are very outgoing tend to show off the more..it's like they've found an opportunity to shine..something like that..' (NFHS-5-I)

The incidental observation about a cloud of doubt on the influence of lesson reflection in the overall performance of the students may be valid especially when the focus of discussion is on how far the students would be able to answer and do well in exams on topics covered outside LS. However, this doubtful observation could be ambiguously inconclusive. Perhaps, what the students need who have been observed to have not improved from LS is just more time to process learning for themselves. The nature of LS being cyclical acknowledges that learning is not a one-time task. To some, it might occur in one sitting but to others a longer period and varied approaches which are explored according to the learning ability of the students might be needed.

The findings of this study signified that lesson reflection conducted within the context of Lesson Study puts forth constructible affordances as byproducts of varied teaching approaches based on observations derived from the cyclical nature of LS. This proactive approach to the teaching and learning process, in this particular case, allowed realization of an improved student learning particularly to the slower ones as dominantly observed by the Lesson Study implementers and team leaders.

5. Summary of Findings, Conclusions, and Recommendations

This section summarizes the main research findings of the study. The main research question is: What are the perspectives of teachers and school leaders about the role of lesson reflection through Lesson Study in meeting desired learning outcomes? The study sought to provide answers to this basic question by answering more specifically the following subproblems:

1. Teachers and School Leaders' Perspectives on Lesson Reflection in the Context of Lesson Study

Teachers and school leaders' perspectives about lesson reflection conducted in the context of Lesson Study (LS) are set on (1) improved lesson preparations, (2) improvement in lesson execution, (3) student learning facility, and (4) teachers' professional growth. These four concepts are interrelated, and they all contribute in the cyclical essence of Lesson Study particularly on the role of lesson reflection.

Of the four perspectives, improvement in lesson execution surfaced as the most dominant one. This perspective is further stretched into three ideas where lesson reflection more specifically comes as means to observe students' (a) behavior in class, (b) reactions to the lesson processes being conducted, and (c) level of participations in class. Moreover, lesson reflection is also seen as means for students to better understand the lesson or instruction. Within this concept, the students are able to discover learning. Also, the use of lesson reflection provides a way for the students to reflect on their own learning. Lesson reflection, when done within the context of LS, is seen as means to improve lesson preparations.

Another perspective that came out talked about teachers' professional growth. Doing reflection within the scope and context of LS serves as a vehicle for teacher-implementers to grow professionally for the benefit of the students.

2. Effects of Lesson Reflection on Instruction.

The findings in the second subproblem revealed that lesson reflection affects instruction mainly in two areas. These two areas are on (1) lesson preparation and delivery, and (2) learning by doing and making learning discoveries. Under the first main area, four sub-themes on how lesson reflection affects learning came out, namely: (a) enhances teachers' confidence and adjustability, (b) deeper understanding of students' learning abilities by the teachers, (c) initiates a thorough lesson evaluation, and (d) lessons become more executable.

Moreover, findings for subproblem two highlighted the aspect of teaching whereby reflection makes an impact on, that is, students learn by doing. Apart from learning by doing, students are able to discover learning on their own or with their peers.

3. Teachers and School Leaders' Perspectives on the Use of Reflection through

Lesson Study in Meeting Desired Learning Outcomes

The findings for subproblem three revealed that teachers and school leaders have the following perspectives about lesson reflection in meeting desired learning outcomes, namely: (1) repeated lesson revisions improve students' performance, (2) reflection bridges student learning through teachers' anticipations based on observations, (3) learning is bridged particularly to slow students, and incidentally, reflection carries doubtful to no influence on student learning.

The first concept under these findings being that repeated lesson revisions improved students' performance has two sub-themes, namely: (1) students learn by doing, and (2) students learn by interacting with friends.

On a different perspective, this study noted an incidental observation that lesson reflection impressed a doubtful to no influence on student learning as cited by one of the LS implementers. On this part of the findings, the participant who cited this feedback referred this observation to an occasion when a result of a series of lesson revisions where positive outcome is seen is used as a gauge in measuring student learning over a complete syllabus. The researcher contends that while results of a study on reflection such as this carries a substantive replicability as one of its characteristics, its findings should not be adjudged as one that carries justifiable generalizability. Such observation, however, opens up to another promising topic of interest to study and explore.

6. Conclusions

1. This study aimed to determine the perspectives of the teachers and school leaders on the use of lesson reflection through Lesson Study in meeting desired student learning outcomes.
2. This is a case study that sought participants and key informants' perspectives on lesson reflection the way it is used in Lesson Study, how reflection affects instruction, and how lesson reflection influences student learning.
3. The design of the study being qualitative and the composition of participants whose sharing were analyzed using reflexive thematic analysis by Braun and Clarke (2019) provided rich sets of information in finding answers to the research questions.
4. The results of data analysis pointed to the clarification on the role of lesson reflection within the participants and key infromants' context of doing Lesson Study.
5. Lesson reflection was found useful in improving lesson plan and delivery allowing for a better understanding of the lesson by the students and allowing the teachers to grow professionally.
6. It was also established that doing lesson reflection the way Lesson Study does it positively affects instruction by enabling better lesson preparations with activities that provide opportunities for the students to learn by doing and making learning discoveries
7. Lesson reflection was found to have improved students' performance

8. The reflexive process whereby data analysis was conducted and the theories subscribed to in doing the analysis led the researcher to come up with constructive interpretations of meanings that the rich data provided

9. The completion of this study and the encouraging results through the perspectives that surfaced provide a platform on how lesson reflection may be carried out, contextually and procedurally

10. The results reached here do not intend to put forward a conclusive generalization about the study on lesson reflection. This study is limited to the institutions where respondents came from and whose experiences generously narrated ideas about lesson reflection particularly on its role in meeting desired students' learning outcomes.

11. The results however carry promising ideas related to the meaningful utilization of lesson reflection. It is in this area that this study contributes its findings and fills the gap on the employment of lesson reflection

12. The absence of a particular study concerning the use of lesson reflection under DO 42 s 2016 and how such reflection could be purposively utilized in meeting desired student learning outcomes propelled the researcher to undertake this research work.

13. This study would provide an empirical basis for strengthening the policy's rationale in employing lesson reflection in meeting desired learning outcomes of the students.

14. The purpose of this study was to emphasize the employment of lesson reflection through lesson study to provide meaning and lend direction to educators review and revisions of different teaching approaches or strategies in the effort of meeting desired learning on the part of the students.

Recommendations

In light of the conclusions from this study, the following are suggested:

1. As there is lack of study that specifically concerns the enhancement and more conscientious way of doing lesson reflection in connection with the DO 42 s 2016, this paper fills that gap and offers its empirical findings as gainful reference for the Department of Education to review the policy guideline on how reflection should be employed by teachers after the conduct of lesson.

2. In relation to the requirement for the teachers to do lesson reflection under the mandate of DO 42 s 2016, this paper recommends the use of lesson reflection following the Lesson Study format, and do modifications where necessary. Doing and analyzing the impact of a systematic lesson reflection the way LS practitioners do would not only provide more meaning to teachers' instructional skills but also afford opportunities for the students to mindfully achieve learning.

3. It is highly recommended that school-based management consider doing lesson reflection via Lesson Study approach as part of teachers' professional training and development.

4. Educational institutions to practise lesson reflection the LS way in a manageable context to meaningfully assess its impact on the teaching and learning process not only in Science and Math but also in Languages and Kinesthetic departments.

5. Teachers employ lesson reflection via LS way to a particular group of students like the underperforming ones.
6. Teacher training should capitalize on the opportunities offered by conducting lesson reflection the LS way for teachers for a deeper appreciation of the teaching profession.
7. Teachers use lesson reflection as means to meet instructional end rather than consider it as the end part of instructional means.

For further research:

In connection with the perceived 'uncertainty to no impact' observation noted as incidental in the results on the role of lesson reflection in student learning, a further study intended to 'explore students' learnability through the lens of lesson reflection in the context of Lesson Study' may shed light on this issue.

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