



International Journal for Lesson and Learning Studies

Innovating the Singapore English Language curriculum through lesson study

Lydia Tan-Chia Yanping Fang Pow Chew Ang

Article information:

To cite this document:

Lydia Tan-Chia Yanping Fang Pow Chew Ang , (2013), "Innovating the Singapore English Language curriculum through lesson study", International Journal for Lesson and Learning Studies, Vol. 2 Iss 3 pp. 256 - 280

Permanent link to this document:

<http://dx.doi.org/10.1108/IJLLS-03-2013-0017>

Downloaded on: 27 May 2016, At: 09:54 (PT)

References: this document contains references to 100 other documents.

To copy this document: permissions@emeraldinsight.com

The fulltext of this document has been downloaded 331 times since 2013*

Users who downloaded this article also downloaded:

(2013), "Facilitating curriculum reforms through lesson study", International Journal for Lesson and Learning Studies, Vol. 2 Iss 3 pp. 207-217 <http://dx.doi.org/10.1108/IJLLS-01-2013-0006>

(2013), "The role of lesson study in facilitating curriculum reforms", International Journal for Lesson and Learning Studies, Vol. 2 Iss 3 pp. 200-206 <http://dx.doi.org/10.1108/IJLLS-06-2013-0039>

(2014), "Does Lesson Study work?: A systematic review on the effects of Lesson Study and Learning Study on teachers and students", International Journal for Lesson and Learning Studies, Vol. 3 Iss 2 pp. 137-149 <http://dx.doi.org/10.1108/IJLLS-05-2013-0024>

Access to this document was granted through an Emerald subscription provided by emerald-srm:556568 []

For Authors

If you would like to write for this, or any other Emerald publication, then please use our Emerald for Authors service information about how to choose which publication to write for and submission guidelines are available for all. Please visit www.emeraldinsight.com/authors for more information.

About Emerald www.emeraldinsight.com

Emerald is a global publisher linking research and practice to the benefit of society. The company manages a portfolio of more than 290 journals and over 2,350 books and book series volumes, as well as providing an extensive range of online products and additional customer resources and services.

Emerald is both COUNTER 4 and TRANSFER compliant. The organization is a partner of the Committee on Publication Ethics (COPE) and also works with Portico and the LOCKSS initiative for digital archive preservation.

*Related content and download information correct at time of download.



Innovating the Singapore English Language curriculum through lesson study

Lydia Tan-Chia
Ministry of Education, Singapore

Yanping Fang

*National Institute of Education, Nanyang Technological University,
Singapore, and*

Pow Chew Ang

Ministry of Education, Singapore

Abstract

Purpose – The purpose of this paper is to report on an exploratory study, Project En-ELT (enhancing English language learning and teaching), which used lesson study to mediate curriculum innovation to enhance student learning by engaging teachers in learning and implementing effective English language teaching strategies and formative assessment practices in seven lower secondary schools in Singapore over two years. It aims to portray how lesson study can be adapted to build teacher pedagogical capacity in carrying out the language development goals formulated in the revised national English Language Syllabus 2010.

Design/methodology/approach – Project evaluation is embedded systematically into the research design from the very beginning of the pilot to in between each step of lesson study process across three consecutive cycles in order to evaluate the effectiveness of the pilot program from the project advisors', participating teachers' and students' perspectives. Both the quantitative and qualitative data were collected in and across the instructional steps and lesson study cycles to create immediate evidence-based feedback to inform continuous on-going adjustment and improvement.

Findings – Findings indicate that across the three cycles the lesson study teams moved from isolated to collaborative planning; from poor understanding and mechanical execution of the retelling strategy to a more sophisticated and skilful use of reciprocal teaching. An increase was found in teacher confidence and positive attitude towards the value of the project in developing their language and teaching effectiveness. There was enhanced student engagement and collaborative participation in the lessons while assessment for learning was fostered in the classroom.

Originality/value – Program evaluation provided feedback loops to ensure that each enactment stage and cycle learns from and builds on the limitations and strengths of the previous one(s) so internal consistency, continuity and coherence can be achieved for concrete implementation; different perspectives from the project officers/researchers, teachers and students were collected consistently and analyzed to gauge the accuracy of the findings; the collaboration between Ministry of Education curriculum officers, specialists and teachers, through lesson study, was able to create democratic relations rested upon interdependence, and mutual respect and trust; and it provides an illustrative case of how lesson study can be used effectively to help schools carry out national curriculum and pedagogical innovations. The project has important implications for addressing the issues of implementation and sustainability of innovative curriculum practices.

Keywords Lesson study, Assessment for learning, English language teaching and learning, Teaching strategies, Retelling, Reciprocal teaching, Process writing, Singapore

Paper type Research paper



The authors would like to sincerely thank the project schools for their contributions to Project En-ELT. They are: Anderson, Bukit View, Bukit Panjang, Damai, Geylang Methodist, Nan Chiau and Peicai Secondary Schools. They also owe the development of the project to the Project Consultant, Dr Ng Seok Moi. They also owe the collection of the qualitative and quantitative data to the precious School Advisors. They are: Seah Min Fann, Jane Lee, Florence Lee, Joyce Chua, Lim Geok Choo, Susanna Loh, Shaun Edmund Lim, Sim Joo Jin, Dawn Quah, Rachel Chen, Nur Sabariah.

1. Introduction

Lesson study has been identified as an effective professional development model since it was introduced to the western countries, such as the USA (Stigler and Hiebert, 1999; Lewis, 2000; Lewis *et al.*, 2004), spread to other Asian countries, such as Singapore (Fang *et al.*, 2009b; Lim *et al.*, 2011), and adapted into learning study, such as in Hong Kong (Lo *et al.*, 2005; Lo and Marton, 2012) and Sweden (Carlgren, 2012; Runesson, 2006). Yet, in Japan and China, where the long traditions of lesson studies have been practised by teachers as part of their routine work, they have served as the fundamental institutional and cultural platforms to test out innovative curriculum ideas in the classrooms and provide feedback to national curriculum and policies (Lewis and Tsuchida, 1998; Wang and Paine, 2003; Fang *et al.*, 2012). Literature on lesson studies, including those documenting curriculum changes and innovation through lesson and learning studies, is dominated by mathematics and science cases and scarcely any successful cases of English language through lesson study have been reported to date. Therefore, an English language case is aptly required to illustrate the effectiveness of lesson studies in English language teaching (ELT) and its important adaptations in curriculum and teaching contexts as well as under linguistically diverse settings, such as Singapore's.

In this paper, we report the conceptualization, design and findings of research on the effectiveness of implementing innovative teaching strategies based on a collaborative two-year pilot project, enhancing ELT (En-ELT) between the Singapore Ministry of Education (MOE) and seven secondary schools. The project aimed to assist teachers as they implement the English Language Syllabus 2010 at the lower secondary so that their students will be better prepared for learning at upper secondary, deepen teacher leadership in school-based curriculum planning, development and implementation and infuse twenty-first century competencies through contextualized language teaching and learning. To facilitate the curriculum innovation, the pilot was conducted by bringing teachers together for lesson study to explore the use of strategy-rich lessons in class.

2. Background

The state of English language education in Singapore

In Singapore, while student achievement in English has been maintained at national examinations, there is a need to safeguard language standards in the face of new global challenges facing our students. However, the daily classroom that surrounds students is often characterized by unevenness in language practice (Curriculum Planning and Development Division, 2006) and an adherence to an examination-driven pedagogy (Goh *et al.*, 2005). Dominated by traditional forms of teacher-centered and “teacher as authority” approaches, classroom instruction pays little attention to the development of more complex cognitive skills among students (Luke *et al.*, 2005).

The revised English Language Syllabus 2010 (Curriculum Planning and Development Division, 2009) was promulgated as a national effort to address this persistent situation. Yet, to attain the outcomes emanated in the syllabus, it required attention to be given to the teaching of “skills, learner strategies, attitudes and behavior” (SSAB) (Curriculum Planning and Development Division, 2009) which involved the close coordination of visual, graphic, linguistic and cognitive skills and processes based on six areas of language learning and 29 learning outcomes as delineated in the teaching document.

In line with the syllabus, in addition to explicitly teaching grammar at word, phrase and text levels, the teaching of oracy skills and the use of information and communication technology have continued to make complex demands on teachers. At the same time, teachers need to work with students from different linguistic backgrounds and with varying abilities. For the students, learning to use the language for everyday functional and academic purposes as well as to read, view and listen extensively required effort and skill development which have to be mediated through the curriculum.

Need to move away from a one-off training model

For a long time, the modes of professional development have centered on mass dissemination and training of key teachers through workshops together with the provision of both print and online teaching resources to help them prepare for the new curriculum as well as cascade new knowledge and skills to the rest of their teachers at different year levels. To encourage teachers to deliberate on their teaching, the MOE has provided “time-tabled” time (usually an hour per week), which is reportedly used by most schools in different ways without much enforceable structure and overall planning. With time-tabled time alone, teachers will not automatically be able to come together and plan what is required of the syllabus. It is what teachers talk about and how they act on their talk that will (Ball *et al.*, 2008). As many researchers would argue, change in teacher beliefs can only take place after they have seen what they embarked on can result in improved student learning (Guskey, 2002). Such change, if it were to occur, requires recognition of the influence of context on knowledge creation and use (Eraut, 1994). Hence, to support teacher’s work, there is the need for the project team to work together with teachers in schools to identify ways to narrow gaps in daily practice by helping them review and adapt their instructional plans and curriculum design, based on syllabus outcomes, while strengthening their pedagogical and assessment practices within the framework of lesson study.

3. Theoretical underpinnings

Critical literacy at the secondary levels

At the secondary level, the relative complexity of content materials and the need to process information more deeply require students to read to learn in order to make meaning, and decipher purpose, audience, context and culture in their comprehension and to use language with effectiveness, independence and fluency. To ensure the development of a range of such skills, the English Language Syllabus 2010 stipulates the ability among students to respond to and process information at the literal and inferential levels (Learning Outcome 2). Students are required to listen to, read and view texts critically (Learning Outcome 3). This requires of students the comprehension of implied meaning, the exercise of higher order thinking and the making of interpretive judgment and evaluation. Students also need to listen, read and analyze a variety of rich texts for learning in the content areas and to understand how language is used for different purposes (Learning Outcome 4).

To achieve these learning outcomes, researchers call for classroom teaching and learning which requires an active construction of meaning on the part of students as well as the co-construction of meaning, that is, interpretations of the text constructed by readers thinking about the text together with their teachers and fellow classmates whose reactions and interactions are likely to affect individual thinking about it

(e.g. Palincsar and Brown, 1984, 1986; Lipson and Wilson, 1997; Owocki, 1999; Pressley, 2000; Ritchhart and Perkins, 2008; Beghetto and Kaufman, 2010). To allow teachers to move beyond the conventional and familiar “drill and practice” routine and word-level development, found in decoding and vocabulary instruction, teachers need to be able to use a set of teaching strategies that place inherent attention not only on “close reading” but also “critical reading,” which is central to critical literacy as suggested by McLaughlin and DeVoogd (2011, p. 278) and earlier researchers such as Gambrell *et al.* (1985). When students critically think and respond to what is read, they go beyond the literal level to a deeper examination of ideas and their purpose.

In line with the above research-based requirement for teaching critical literacy, the project team identified four language teaching strategies to pilot the teaching and development of language: retelling (RT), reciprocal teaching (RcT), creative, critical and inventive thinking (CCIT) and process writing (PW). This paper will focus on three of these strategies: retelling, reciprocal teaching and process writing. Process writing is added to the list of proposed text processing strategies because writing promotes not only self-expression and communication but also the comprehension and representation of ideas once these ideas become translated into text (Flower and Hayes, 1980, 1981; Chandrasegaran, 1991). In the words of Luke and Freebody (1999), writing, without doubt, allows readers to become “text users”. The focus on “process” takes the form of critical response, the co-construction of text and conferencing in order to review, revise and edit a common draft.

This combination of teaching strategies was identified partly because it has been tried and tested in the primary grades (specifically, the strategies of retelling and process writing). The set of teaching strategies is also consistent with Pressley’s (2000) description of effective strategies, where each strategy incorporates multiple steps or, in his words, “multicomponential and developmental” (p. 557) steps, rather than a discrete or isolated process. Hence when students practise the multiple steps, all the areas of language learning would be integrated during instruction. For example, retelling facilitates prediction, close reading of the text, paraphrasing words and ideas in writing, and sharing and comparing by way of listening and interacting based on one another’s retelling. Reciprocal teaching, on the other hand, encourages a range of skills – predicting the text, clarifying words or ideas, raising a variety of questions and summarizing the gist of the text. Similarly, process writing requires students to gather ideas, co-construct them into paragraphs before revising them to improve both the quality and expression of the ideas.

Teachers themselves can encourage transfer of learning (through reflection) by going over when and where the strategies being learned might be applied. They can also incorporate assessment for learning (AfL) practices in the course of listening, speaking, reading and writing to foster meta-cognitive thinking in the classroom, as what was done collaboratively with our project teachers. Finally, the teaching strategies can be used with a range of rich texts (both literary and informational/functional) in exposing students to varied and good models of language (Table I).

A case for lesson study in the EL classroom

Lesson study within a professional learning community (PLC) is used as the support framework for professional development in Project En-ELT. Since 2005, effort to implement lesson study as a professional development approach to organize teachers’ work has been carried out in a number of primary and secondary schools in Singapore. This surge of interest has been reported by Fang *et al.* (2009a).

Table I.
Teaching strategies and steps

Instructional sequence	Pre-teaching	Instruction	Production/representation	Consolidation
Assessment for learning (AFL) through retelling	Set context to introduce a theme, topic or skill together with learning outcomes expected	AFL through retelling with opportunities for listening, reading, speaking, writing and the use of visual literacy to: Predict main ideas Predict words/phrases Read with purpose Write out the retelling Share and compare	Retelling/recount (oral/written or diagrammatic representation) Share and compare retellings to develop critical listening and spoken interaction via commenting	Review, reflect, evaluate learning in line with learning objectives and learning outcomes
AFL through reciprocal teaching	Set context for topic/theme, to introduce a theme, topic or skill together with learning outcomes expected	AFL through reciprocal teaching (RcT) for comprehension and comprehension monitoring while reading texts for: Predicting Clarifying Questioning Summarizing	At Group-RcT, students will raise questions, shape responses to the questions and summarize the gist of the text	Review, reflect, evaluate learning in line with learning objectives and learning outcomes
AFL through process writing	Set context for topic/theme together with learning outcomes expected Pre-writing through: Retelling and written retelling based on a given text Discussion, or Research	Teacher modeling of writing processes in class: Gathering and organizing ideas Composing through co-construction of paragraphs by drawing responses from students Conferencing to review and revise the draft	Students will replicate the class writing through: Writing in pairs/groups/individually Revising and editing the draft	Review, reflect, evaluate learning in line with learning objectives and learning outcomes

Much of the local effort is spearheaded by academics and researchers from the Curriculum, Teaching and Learning Academic Group, National Institute of Singapore, indicating that lesson study is a viable professional development option for local teachers. From 2009, the Singapore MOE has encouraged schools to use lesson study as one of the major avenues to build professional learning communities in schools.

Learning from other countries

Lesson study has been widely known for its support in helping Japanese teachers successfully carry out fundamental curriculum reforms in the past decades, transforming teacher-centered teaching to student-centered learning in Japanese schools (Lewis and Tsuchida, 1998; Stigler and Hiebert, 1999; Lewis *et al.*, 2006). A similar model in China has also been a key instrument for Chinese teachers in their effort to carry out demanding curriculum reform since 2001 (Paine *et al.*, 2003). In both countries, lesson study is a teachers' tool to study and improve their practice, implement curriculum reform, build school-based curriculum innovations and develop their professional knowledge and the teachers themselves in the process (Han and Paine, 2010; Lewis *et al.*, 2010; Yang and Ricks, 2012).

Its spread to the USA, where the majority of literature on lesson study in English has been produced, has also attested to the potential of its coherent mechanism in developing shared and verifiable professional knowledge (Kazemi and Hubbard, 2008; Morris and Hiebert, 2011), collaborative learning among teachers and their professional commitment (Lewis *et al.*, 2006). While university researchers, working together as knowledgeable others with teachers in building professional learning communities has often been reported, government officials, such as curriculum officers from the MOE, playing researcher and facilitator roles, has rarely been documented. In this research project, what we have developed is a model of MOE curriculum officers working as researchers and advisors in schools to support the implementation of the revised English Language Syllabus 2010.

Expected benefits of lesson study for English language teachers

In centralized educational systems, lesson study is able to organize the whole process of deliberation at the national level by orienting the action and discourse around the envisioned goals and specified outcomes of the curriculum reform which centers on improving student learning (Lewis and Tsuchida, 1998; Wang and Gu, 2007). This process not only develops teachers' pedagogical content knowledge and rich resources for teaching, but also teachers' commitment to the profession (Lewis *et al.*, 2006), teachers as "knowers" as well as produced the data sources for the researchers (Lewis *et al.*, 2010). In the meantime, the emphasis on gathering evidence of student learning highlighted in lesson study also complements AfL practices, which have been woven into the use of the strategies, so as to motivate students to make improvement in their own learning.

There is a high representation of less experienced teachers in our project schools, and researchers (e.g. Fernandez *et al.*, 2003; Fang *et al.*, 2009b) have expounded on how lesson study can serve as a particularly important tool in the professional development of this group of teachers. In giving less experienced teachers first-hand knowledge of teaching through a close examination of actual classroom practice, lesson study allows them to better manipulate teaching content and adjust their pedagogical skills in a shorter period of time. Wang and Paine (2003) explain how novice teachers in China

learn what to teach and how to teach through the process of group lesson preparation, lesson observation and post-lesson discussion.

The potential merit of lesson study for the Project lies specifically in its reported success at building inherent learning opportunities for teachers, the development of a professional community and the creation of a safe environment for teachers to reveal what they do not know (Perry and Lewis, 2008, p. 384). Research has also outlined its potential for “group support” where tasks and roles are distributed across team members and across different communities so that everyone will have a chance to contribute, voice himself or herself and be involved in the work (Cobb *et al.*, 2003). The multiple roles played by the research team as designers, trainers, brokers of new knowledge and resources as well as advocates and documenters for the intervention represent both challenges and learning opportunities as we situate teacher learning in their work settings (Cobb *et al.*, 2003).

4. Methodology

Participants

The pilot was conducted over two years from 2011 until the end of 2012 with a dedicated focus on Grades 7 and 8. The participants for the pilot were invited from seven project schools identified through purposive sampling. At the point of sampling, the schools had a predominant number of beginning or inexperienced teachers, experienced low performance at the national GCE examinations over the last three years and had areas of concern pertinent to teaching and learning EL. They also represented different school types with a spread of students of different abilities. These schools were:

- Anderson Secondary (autonomous).
- Bukit Panjang Government High (autonomous).
- Bukit View Secondary (government).
- Damai Secondary (government).
- Geylang Methodist Secondary (government aided).
- Nan Chiau High (intended to become a Special Assistance Plan school from 2012).
- Peicai Secondary (government).

Research design

As mentioned in the beginning, given the lack of English language cases in lesson studies, our project design endeavored to both augment and adapt lesson study to meet local needs. McLaughlin (1987) recommended that implementing a pilot project at national level requires ongoing information collection and an “ongoing strategy of monitoring and assessing progress and activities associated with [it] at different levels of the policy system” (p. 177). Hence, to capture the “process” as it unfolds, program evaluation based on evaluation research is followed as the research design. For the purpose of this study, program evaluation duly allows “the identification, clarification, and application of defensible criteria to determine an evaluation object’s value in relation to those criteria” (Fitzpatrick *et al.*, 2004, p. 5), using both qualitative and quantitative data which can be collected during project implementation, that is, formative evaluation, as well as at the end of the project, that is, summative evaluation (Fitzpatrick *et al.*, 2004, p. 17).

The evaluation of the “effectiveness” of the pilot program was incorporated into the project design right at the start, a practice recommended by researchers such as Patton (2002), Fitzpatrick *et al.* (2004) and Goodrick (2012) so that evidence for improvement can be gathered at well-spaced intervals during project implementation. The evaluation would also allow the team to examine the merit and worth of the pilot specifically in terms of its intended aims. To do this, the evaluation focussed on “outcomes” (Fitzpatrick *et al.*, 2004, p. 20) at two levels: whether classroom teaching practices were working for teachers and whether students were demonstrating understanding and learning in their response to texts in their listening and viewing, reading and viewing, speaking and viewing and writing and representing of text. The research design is represented in Figure 1.

There are three interrelated major advantages of such a research design. First, it enables an effective study of teacher professional development by moving from unidirectional response, measuring how much teachers are implementing what they learn from professional development, to multi-directional response characterized by the forming of dynamic feedback loops to address rising needs at different points. This allows what Kazemi and Hubbard (2008) advocated as the examination of

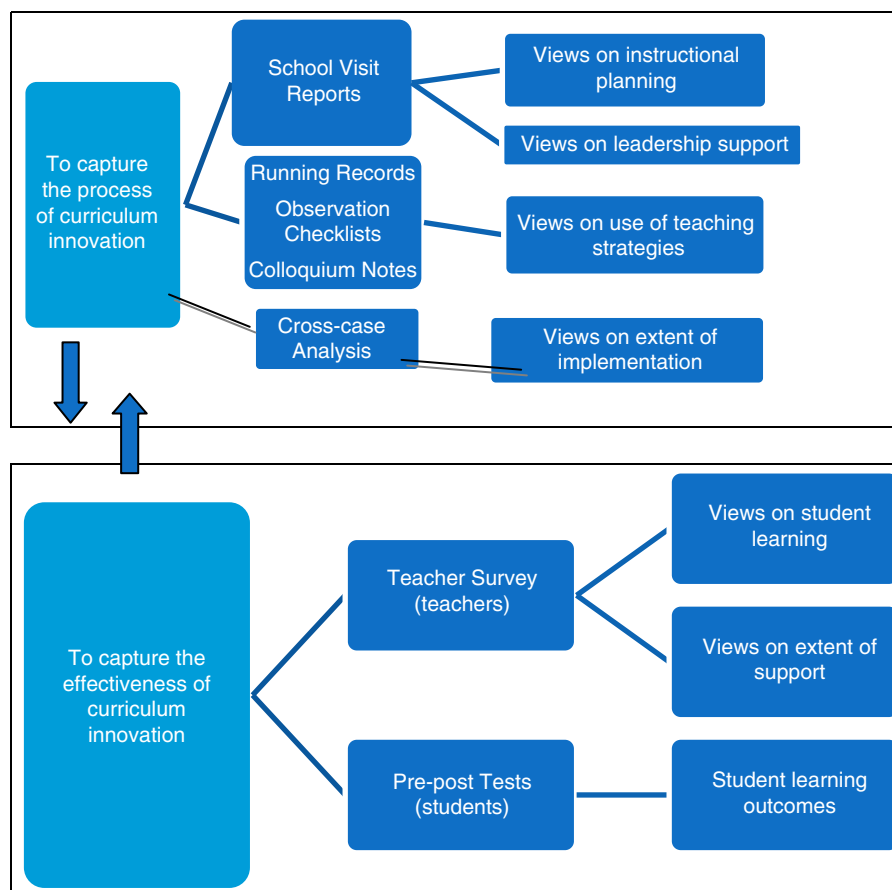


Figure 1.
Research design

learning effectiveness across the contexts of professional development and those of classroom practices to ensure internal coherence and the best result of teacher learning. Second, this developmental process of evaluation moves away from the notion of top-down policy implementation to one of learning from enactment with opportunities to learn from mistakes through adjustment and reflection that is informed by evidence. It is also one approach that develops teachers as both “learners” and “knowers,” as highlighted by Lewis *et al.* (2006). Third, the process not only develops evidence-based habit of thinking and decision making but also fosters a more democratic relationship between MOE officers, heads of department and teachers as they rely on one another for resources, problem solving, generation of information and improvement of teaching and learning, a feature highlighted by Lewis *et al.* (2010).

Findings from both the ongoing process as well as the evaluation of outcomes informed the team of the modifications to be made to the content of the English teaching-learning curriculum, the structure, protocols and delivery of teaching processes during lesson study as well as to provide “a regularized system of feedback at all levels of the system” (McLaughlin, 1987, p. 177) which would then enable the senior management to gauge the potential of the project for “adoption, continuation or expansion” (Fitzpatrick *et al.*, 2004).

The research questions which guided this study were:

- RQ1. Did Project En-ELT bring about the desired level of teacher competency when teachers used effective teaching strategies to facilitate student learning?
- RQ2. Did Project En-ELT influence the quality of formative assessment practices in teaching and learning?
- RQ3. Did Project En-ELT influence the extent of student achievement in listening, reading, speaking and writing?

Innovative features of the project design

As part of the project design, lesson study was intentionally planned to begin and end with “student learning” at the heart of the pilot. For a start, the teaching strategies were woven into each other so that, through integration and overlap, the teachers would have multiple opportunities to plan and practise the skills and model them for student learning while infusing AfL into classroom practice. How the integration was to be done was demonstrated at the training of the three selected teaching strategies followed by instructional planning sessions at school where teachers developed their lesson outlines into research lessons (RLs), complete with rich texts as the stimulus materials and activity sheets as aid to student learning.

Training. Training was planned to focus on learning in action. The first part focussed on the theoretical foundation of each teaching strategy, what it is and where it situates in different language contexts and how each strategy could be integrated with the one before. Principles of AfL were revisited within the context of a teaching strategy. How the strategies are integrated and linked to AfL is illustrated in Figure 2. The theoretical portion of the workshop was followed by an application of theory in practice. Teachers engaged in instructional planning work by putting together an outline of a lesson plan selected from an existing and suitable unit of work to provide a context for the strategy. Subsequently, the teachers conducted a micro-teaching segment based on their lesson outline.

Instructional planning. The project design also rested on the role of the school advisors who led the lesson study before progressively devolving the responsibility to the instructional leaders from Cycle 2 onwards. At the instructional planning meeting, when each lesson study team met with its school advisor, the RL1 teacher, nominated by the PLC, talked through the lesson on behalf of the group. The rehearsal was to allow the team as a whole to spot potential blind spots in the interpretation of the strategy as well as anticipate potential responses from students.

Lesson observations. The RL was usually put to immediate application, within a fortnight from the advisory visit with the RL teacher, to demonstrate the teaching strategy in the classroom. The same lesson was re-taught at RL2 with improvement suggested by the team. RL2 was usually conducted one or two days after RL1.

The class observations allowed teachers to be inducted into the lesson study protocol. Teacher observers were assigned specific segments of the lesson plan to observe and they were required to note down evidence of student learning and the AfL moments that occurred during segments of the lesson. To facilitate observations of student learning, teachers were assigned to sit with student groups in the class.

Colloquia. With two RL per cycle, two teachers and their classes would be systematically observed. The non-RL teachers, who were not observed, became part of the team of observers who make notes, document evidence of student learning and give feedback and lesson analysis at the colloquium which followed to allow teachers to deepen their own awareness and response to students' learning needs. Like the RL teachers, they too were expected to try out each new teaching strategy in their classes. By systematically observing two teachers per cycle, all project teachers would be observed demonstrating a new strategy by the end of Cycle 4 at Year 2.

Data sources

Data on the ongoing process of lesson study was gathered at the end of each training from the workshop evaluation forms, during instructional planning work as field notes and school visit reports and from the lesson observations as running records and from the lesson observation cum AfL checklists. Data at the colloquium was collected from the discussion notes recorded by the teachers.

Data on "outcomes" was gathered from teacher surveys based on a four-point Likert attitudinal scale to gather teachers' perception of the quality of training, lesson study support, the effect of the project on student learning and the suitability of the resources developed for them. The teacher survey also contained open-ended items and a descriptive vignette of each teacher's "participation in the project" given in an account to a friend in another school who had yet to start on the project. The vignette allowed an extended narrative of teachers' perceptions, assumptions and reflections that might not be revealed in the structured response items.

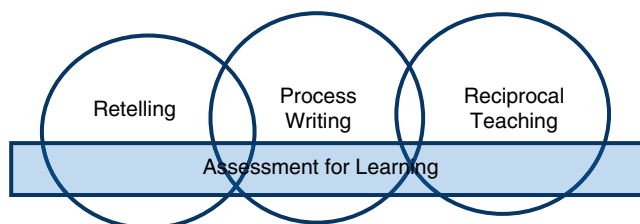


Figure 2.
Integration of teaching strategies

For the study of student learning outcomes, a quasi-experimental design was used to gather results from pre-post tests administered among stratified random samples of students in the seven experimental and seven control schools over three test points. However, their significant difference and effect size is not reported in this paper. The sources of data collected are summarized in Table II.

Analysis of qualitative and quantitative data

Qualitative data gathered in the course of the lesson study was first coded using “open coding” (Strauss and Corbin, 1998) to affix labels to the textual information. The data were then sorted by categories and placed under “core categories” to identify the patterns and themes which emerged to capture the lesson study process at each stage, namely, training, instructional planning, lesson observation and the colloquium. Choice quotes which illustrated these themes were also identified.

Having reduced the data through coding, which created groupings and sub-groupings of information, the data were integrated and summarized in a narrative manner to provide a “thick description” as suggested by Punch (2003) or what Strauss and Corbin called a descriptive and coherent “storyline” (1998, p. 148). The core categories helped to develop themes which relate to the purpose of the study. Quantitative data, collected using the lesson observation checklist and teacher survey,

Sources of data	Qualitative/ quantitative data	Technique for data analysis
Group interviews (project participants) – needs analysis	Qualitative	Coding
Workshop evaluation	Quantitative and qualitative	Percentages Mean Coding Coding
School visit reports – instructional planning	Qualitative	Coding Coding
Running records – classroom observations	Qualitative	Coding
Lesson observation cum AfL checklists – classroom observations	Quantitative and qualitative	Percentages Mean Coding Coding
Notes of discussion on colloquium template – colloquia	Qualitative	Coding
Cross-case analysis – school advisors’ perspective and analysis of curriculum practice, AfL, student learning, use of resources	Qualitative	Coding Standard template to summarize the open-ended comments and responses to structured questions
Teacher survey with 4-point Likert- scale items with open-ended responses and a descriptive vignette – teacher perspective and evaluation	Quantitative and qualitative	Percentages Mean scores Coding: Open-ended responses
Group discussion (with school principals) – project implementation at school	Qualitative	Coding
Pre-post test results – student outcomes	Quantitative	Mean scores Average percentage scores <i>T</i> -tests Effect sizes
7 project schools		
7 non-project schools		

Table II.
Sources of qualitative and
quantitative data collected

was analyzed using descriptive statistics with percentages and mean scores as the unit of analysis.

5. Findings

The data from the multiple sources yielded findings pertaining to the professional training of teachers, curriculum delivery through lesson study, assessment practices, student learning and student outcomes, including the overall consequences and impact of the project on teacher, teaching and learning. In this paper, we focus more on the links between lesson study and the delivery of the EL curriculum by examining teaching and student response to the use of the strategies from the perspectives of school advisors and teachers. Hence the findings will serve to establish, with the necessary evidence, how well strategy-rich lessons, mediated through lesson study, have been implemented in our project schools.

Training: providing the ground work for practice at school

Training was provided at the start of each cycle, and this allowed teachers to be introduced to subject matter knowledge through the explicit teaching of the strategies on retelling, process writing and reciprocal teaching. Contextualization was provided through the use of hands-on activities, video-clip examples, while the simulation of lesson study processes took place through the instructional planning segment, micro-teaching exercise and the critique which followed. An examination of the teachers' responses to the training (gathered from the teacher survey) showed that they acknowledged the knowledge, perspectives and skills gained were useful and applicable in their classroom (retelling: mean score of 3.4; process writing: mean score of 3.1; reciprocal teaching: mean score of 3.3).

Instructional planning across three cycles: moving from solo effort to collaboration

In Cycle 1, the school advisors' report on the RL drew attention to the false starts, uncertainty and incomplete understanding of both the process of lesson study as well as the interpretation of the teaching strategy. For instance, planning, at the very beginning, was not collaborative but a solo effort, with the RL plans put together by the instructional leaders or the level coordinators. School advisors spend time on basic procedural matters such as "clarifying the purpose of the steps" for retelling and incorporating the "AfL moments" into the lesson.

In Cycle 2, the school advisors noted that there was emerging evidence of collaboration in the planning of the RL. In all schools, the RL1 teachers talked through the plans and ideas for the pre-writing step, how they raised questions to facilitate the co-construction of text, and conferenced to edit and improve the paragraphs co-constructed with the class. Teachers wrapped up the RL with instructions for groups to replicate one additional paragraph on their own. The teething problems were related to the selection of the rich text (GMSS), the superficial interpretation of the teaching strategy by a disparate team of teachers (ASS) and the insistent use of summary writing to teach process writing (BVSS) even though both shared different approaches and lesson objectives.

By the time the teachers arrived at Cycle 3, in Year 2, teachers were found to show a keener sense of "what to expect" and "what to do." This was in part guided by the formalized and refined advisory visit tool, which sets out a "clear agenda of action," and the availability of more complete lesson plans, as opposed to lesson outlines, for discussion. As the RL teachers talked through their lesson, the non-RL teachers

attempted to “spot learning gaps” by anticipating the challenges teachers might face with their own classes of students.

The teacher surveys confirmed the views of school advisors that instructional planning fostered collaboration and improved teacher confidence when they co-designed their RL. They regarded instructional planning as learning opportunities – 100.00 percent (Survey 1); 90.00 percent (Survey 2); 100.00 percent (Survey 3).

Findings from the vignettes revealed that teachers benefitted from learning “to modify their lessons” for different purposes to produce RL1 and RL2. Instructional planning allowed them to clarify concepts from the training, discuss as a team how the lessons fit coherently into the units of work and where to make the improvements. In the course of instructional planning the PLC developed “team work,” while deepening their insight into how lessons “should be structured.” In the words of one beginning teacher, “the entire level benefitted; no one gets left behind” (Anna).

Lesson observations: surfacing problems to inform learning from gradual improvement

In Cycle 1, sharing and comparing was critical to retelling at the secondary level but it was not as effectively delivered. According to the school advisors, only 50 percent of the teachers or (seven out of 14) were able to encourage students to compare and note the differences between the original text and their retellings based on the Brown and Cambourne’s (1987, p. 33) prompt: “Turn over the text and write out your retelling for someone else who has not read your text.” It later dawned upon the teachers that “sharing” preceded “comparing” and how the step had explicitly integrated listening and speaking, another area of language learning in the English Language Syllabus 2010.

In Cycle 2, the use of retelling with process writing created greater ease in the gathering of ideas for writing because students could “borrow” points from the given text as well as add ideas of their own. Both teachers and school advisors acknowledged the integration of retelling with process writing reinforced the practice of retelling from Cycle 1 and that most students were able to recall, share and organize ideas in preparation for class writing. However, most of the teachers who claimed “familiarity” with process writing were in fact not comfortable with the idea of co-construction by drawing responses from students and building upon them. For some, the writing process was overtaken by uncomfortable “silence” when students were not forthcoming with their personal responses or when they were not sure of how to respond to prompting questions that were sometimes so unspecific (e.g. “So how [...] what’s next? What do you want to write?”). An examination of student work seemed to suggest longer and more complete pieces of (written) retelling compared to those analyzed in Cycle 1 but few observed instances of group writing/writing in Pairs that matched the paragraphs of the text in quality and length. Furthermore, class conferencing was limited to rudimentary error correction at word level, usually in the form of word substitutions.

In Cycle 3, the basic steps of reciprocal teaching (RcT) as a strategy was found in most lessons. The RL teachers were clear in communicating the purpose of RcT, and were able to follow the sequence from predicting (P) to clarifying (C), questioning (Q) and summarizing (S), using the appropriate meta-language of the strategy, though the process did not always flow as smoothly. The challenge for teachers was the interpretation of the strategy over two parts: Class-RcT and Group-RcT. While teachers had difficulty eliciting a range of questions from the students, they were able to elicit and co-construct answers to some literal and inferential questions with their

students. Teachers were also able to model summarizing most successfully for their students as well as assign roles to facilitate the practice of Group-RcT even though the group discussion of text was not always effectively carried out.

Data from the teacher surveys conveyed strong agreement on the learning opportunities that lesson observations provided the teachers – 96.97 percent (Survey 1); 100.00 percent (Survey 2); 95.00 percent (Survey 3). This corroborated with findings from the vignettes which revealed that teachers found the opportunity to observe lessons “live” had enabled them to interpret the different uses of strategies in practice. The lesson enactment, they conceded, had highlighted potential “pitfalls in teaching” as well as “best practices.”

Colloquia: identifying gaps, informing improvement and celebrating learning

In Cycle 1, the school advisors facilitated the session as well as explained the protocol, the process of engagement, the purpose of the session, the focus on student learning and the key learning points for follow up action. In the course of lesson analysis, teachers began to make more sense of their observations in terms of student learning, and not merely by what the RL teacher taught in class, appreciate the language and skills students demonstrated to predict, read, write, share, compare and contribute to the retelling lesson.

In one school (BPGH), teachers moved from “absolute silence” at the first advisory visit to the “emerging voices of all teachers” at Colloquium 1. The lesson analysis and discussion on the gaps in student understanding and how the lesson delivery could help narrow these gaps or scaffold student learning had helped the team to derive the principles of skilful teaching from the observations of student learning at RL1 which were then applied in practice at RL2.

At Colloquium 2, the teachers were often pleasantly surprised at the chunks of “continuous sentences” written by students during written retelling. Any form of progress in student learning was an inherent motivator for teachers. In this regard, school advisors J.C. and L.T. noted the surprising “shift in teacher attitude” from ambivalence and “negativity” to “cooperation” at BVSS as teachers witnessed the improvement in student learning and participation in response to the changes they made to instruction at RL2.

In Cycle 2, the post-lesson discussion among teachers was centered on the co-construction of text and how to knowingly extend students’ engagement with both the task and the text (BPGH, PCSS). In another (GMSS), the colloquia provided the opportunity to build shared understanding on the relevant use of a rich text as the lesson stimulus, as opposed to the use of moving images, especially when the students themselves were not able to express themselves in good spoken language by recasting images into words.

In Cycle 3, compared to Cycle 1, school advisors noted that teachers cited evidence of student learning more extensively. In one school (BPGH), teachers recorded student learning on lesson observation templates, an iPad and cameras. Familiarity with the lesson study processes aided discussion in Cycle 3. As school advisor J.C. observed, teachers had become “more forthcoming and quicker to respond since they were now more familiar with how the conversation is conducted.” The instructional leaders facilitated the colloquia with a firmer grasp of the protocol and order of discussion with reference to the “colloquium agenda tool.”

Similarly, the colloquia were unanimously perceived by teachers to intensify self-reflection on how one can make the improvement to teaching. As indicated in the

teacher surveys teachers had consistently endorsed the learning opportunities made possible by the colloquia – 96.97 percent (Survey 1); 100.00 percent (Survey 2); 95.00 percent (Survey 3). The “critique” and lesson analysis helped generalize “principles for skilful teaching.” This corroborated with findings from the vignettes where teachers acknowledged the importance of mutual support and learning from fellow colleagues. Professional growth occurred when they were able to “share and compare” ideas, offer “critique” and “specific feedback” and built shared understanding or “teacher beliefs” as well as growth through “positive failure” which did occur at RL1 Class-RcT lessons. In the words of a teacher: “The colloquia were really useful. I learnt from the different perspective[s] of the different teachers. I liked the thought provoking questions the MOE facilitator raised, because they made us reflect on why we do what we do, something we do not often do in the hustle and bustle of daily life.”

Teacher learning of AfL across retelling, process writing and reciprocal teaching over three cycles

Assessment practices in retelling. The teachers were generally aware of how AfL could influence student learning but at least 50 percent of them or seven out of 14 were not able to use the information subsequently to make adjustments to their lessons. The practice of recording students’ progress was observed only among five out of the 14 teachers. This could be attributed to the fact that, in Cycle 1, teachers had acquired neither an intuitive focus on “student learning” as central to teaching nor the need to gather evidence of student learning on an ongoing basis.

Assessment practices in process writing. Nine of the 14 teachers could handle class writing and class conferencing to effectively bring out the AfL moments but only three of the 14 teachers could show students how to reflect on their own writing and effect error correction. This meant that the teachers made an effort to incorporate AfL practices in their process writing, even though the AfL moments could have been more effectively capitalized to enhance peer correction.

Assessment practices in reciprocal teaching. All the 14 project teachers had raised questions to probe and check students’ understanding of the text, encouraged them to reflect on the outcome of their learning, and co-constructed responses by building on students’ answers. However, encouraging students to self-evaluate the adequacy of their responses remained a challenge for the teachers. Over the course of time, it became intuitively apparent to teachers that reciprocal teaching had a number of inherent AfL features which could be realized the moment the strategy was applied.

This corroborated with findings from the teacher surveys in which they declared that they were able to identify and incorporate AfL moments in their classroom practice as they progressed over the course of the three cycles – 100.00 percent (Survey 1); 93.33 percent (Survey 2); 94.74 percent (Survey 3). Such AfL moments became more deliberately incorporated at various points during instructional planning and during the RL itself. Teacher-observers also became more attuned to recognizing and picking out these AfL moments during lesson observations.

Impact on student learning of skills during retelling, process writing and reciprocal teaching and their overall English language learning over three cycles

The majority of the teachers affirmed in the teacher surveys that their students were progressing in their use of English skills (97.14 percent at Survey 1; 90.00 percent at Survey 2; 80.00 percent at Survey 3). However, the progress occurred in areas apart from listening and speaking. In fact, 45 percent of the teachers, or nine out of 20

teachers, were not persuaded that the Project had enabled their students to progress effectively in listening and speaking. In total, 74 percent of them would have liked to see relatively greater exposure being given to listening and speaking among the majority of their students. This could be attributed to the fact that oracy skills were not made as explicit or highlighted repeatedly in the pilot as reading and writing.

In the area of reading and comprehension, 95 percent of the teachers agreed that the curriculum activities had enabled the majority of their students to critically process what they read, including making reflections and evaluation. As a result, teachers such as Hui Ling and Anitha noted that their students had become more active learners, “engaged” in the learning process, and had grown in “confidence” as language users. They saw strategies such as reciprocal teaching to be useful for comprehension. Anna emphasized: “What I like the most is that students are now interacting more closely with the text. You can see evidence of close reading as students annotate the text by highlighting key words/phrases, jotting down LIE (literal, inferential, evaluative) questions and summarising main points.”

In the area of writing, teachers noted their students had acquired a wider range of “vocabulary” and were learning to recognize common grammatical errors as well as other textual and language features in the course of editing and exposure to rich texts. Importantly, even though teachers recognized that retelling and process writing had created opportunities for students to “read purposefully,” form “good sentences” and “organize their thought” during class and individual writing, only 36.84 percent of the teachers were convinced that their own students were able to write more effectively.

Overall impact of the project

Beyond the critical literacy skills in the areas of reading and writing, the classroom data illustrated that teaching strategies of retelling, reciprocal teaching and process writing, enacted through a co-constructed curriculum, could be used not only to teach reading and writing holistically but also to emphasize other areas of language learning such as listening and speaking, as well as the use of language for impact – learning outcomes as delineated in the English Language Syllabus 2010.

Furthermore, for teachers who needed to determine the selection of teaching strategies, the findings seemed to suggest that such a “pedagogy of choice” in an EL curriculum at the lower secondary could be one based on the following criteria. Whichever the strategy, it should:

- allow an integration of all language skills taught holistically and systematically;
- combine multiple levels and steps in a lesson;
- involve students directly in their own learning and peer/self-assessment;
- take advantage of an array of rich continuous texts; and
- be supported through sustained use and application in appropriate EL lessons.

Overall, school advisors registered a change in teachers’ professional attitudes towards the project. Teachers, especially younger teachers, felt guided by their peers and more experienced colleagues. They learned to sharpen their skills from “watching their more experienced colleagues” in class. Anna sums it up very cogently: “As a Beginning Teacher, I find my participation in the En-ELT project as an enriching experience. It equipped me with the resources and structure to facilitate the learning and teaching of English to my Sec 1 classes.” To which Xiao Tang echoed a similar view: “The En-ELT

project has been a fruitful journey to me [a beginning teacher]. I have learnt much about lesson planning and incorporating AFL moments in the classroom. At the same time, I feel more confident and willing to try new approaches as a teacher.”

Representing the more experienced teachers, Arthur, an HOD, affirmed that the “various platforms for discussion and planning (e.g. workshops, colloquia, etc) also helped older colleagues rethink their approaches and allowed them to raise the keenness of the lesson further.” Tou Hwa, another HOD added: “It has been fun participating in the En-ELT project. I learnt so much from my dedicated team of teachers, and through the clarification by the content/pedagogy experts at the training workshops and colloquia. I’m looking forward to more engaging participation of my students during EL lessons, and meaningful discussions of teaching and learning with my colleagues.”

For the non-RL teachers who were the observers at RL but who carried out the RL independent of lesson observations, the merit of the lesson study process was not lost on them. Michelle noticed: “Watching a class also helped me to expect the problems that might come up in mine, and allowed me time to pre-empt them.” At NCHS, another teacher affirmed that “non-RL teachers sit in at RLs and Colloquia to deliberately maximize [the professional development opportunity]” for all teachers. However, the issue of evenness of practice among RL and non-RL teachers in each cycle remains an inherent gap in the project model that has to be addressed.

6. Discussion and conclusion

As an exploratory study, Project En-ELT sought to examine how lesson study could be used to mediate curriculum innovation by engaging teachers and students in the effective use of teaching strategies and formative assessment practices in the classroom. The pilot attests that lesson study can enhance the building of subject matter and pedagogical knowledge by getting teachers to weave the teaching strategies with great intentionality into each RL. This approach strengthened commitment to quality learning among students with resultant improvement in AFL.

Lesson study built knowledge in EL teaching by weaving teaching strategies into the RL
Lesson study connected teachers to their subject matter knowledge during EL teaching through the consistent focus on the learning outcomes of English Language Syllabus 2010 as well as the integration of EL SSAB, including items and structures, in the RL. The integration was woven intentionally into the instructional planning sessions, tested out explicitly during lesson observations and re-examined for improvement during the colloquia. These multiple re-visitations of language skills allowed teachers to build shared understanding of the teaching strategies at many levels during the project and to see them exemplified at least twice – once at RL1 and again at RL2. The teacher modeling at RL1 and RL2 demonstrated what was possible in the application of the strategies while lesson study provided the trial-and-error environment through rehearsals and discovery of learning. Pre-teaching of the strategies prior to RL1 added to the repertoire of professional practice and became a useful pre-RL step.

The nature of co-construction of the RL plans placed teachers at the intersection of SSAB and teaching strategies each time they were forced to question themselves, “What will students learn?” and “How will students learn it?” Co-construction compelled teachers to develop “eyes for student learning,” a phenomenon similarly observed by Fang *et al.* (2009a). As teachers built collective wisdom, they examined potential gaps in student learning and provided the most appropriate support and

scaffolding to address learning needs. Through deliberation and conceptual work, knowledge was distributed among teachers.

The move from familiarization to a more sophisticated use of the strategies in EL lessons resonated with the levels of use (LoU), originally proposed by Hall *et al.* (1975) and Hall and Hord (1987) to describe how well teachers could be said to respond to the use of innovative practices. What the LoU illustrated was that teachers were more likely to move along a continuum from “non-use” and “preparation” at the start of an innovation (Levels 0 and 1) to a higher level of use rather than to jump from one transition to another. In this project, it was not unusual to observe “unevenness” in the interpretation and practice of the teaching strategies among teachers and schools but, instead of incompetency, the “unevenness” suggested the need for sustained practice so that teachers could move from “routine use” to “refinement” and eventually to the desired level of “renewal” (Level 6) in the use of the innovation.

Lesson study mediated curriculum innovation by connecting theory to practice through the immediacy of enactment in the classroom

As pointed out by Spillane (2012), lesson study provided the needed structure and routines which helped teachers to translate theory into practice with the immediacy of enactment. This occurred particularly through the use of tools, expressed in the form of templates and thinking frames, which helped to operationalize the lesson study processes during instructional planning, lesson observations and the colloquia. Enactment with the aid of clear “structures,” cycle after cycle, developed the routines of deliberation, negotiation, reflection and consensus building, an approach that seemed particularly useful for project schools who were themselves new to lesson study in English.

The mediation of the curriculum also occurred emphatically through the tripartite roles of MOE, the school and teachers. At the macro-level, the school advisors were one of the key factors that connected practice to possibilities for the teachers. Of the many roles played by the school advisors, three were critical to the outcomes of the innovation – that of facilitator, advisor and problem solver. As facilitators, school advisors modeled the lesson study protocol and standards of practice, pressed for attention on what had been observed and achieved at each RL and pushed for commitment to some collective decisions as a PLC. As advisors, school advisors drew attention to all aspects of teacher development, corrected conceptual errors and highlighted “blind spots” which surfaced in the course of the RL. As problem solvers, they directed attention to some future action to improve the process of teaching and learning English based on generalizable principles of skilful practice derived at the colloquia.

When the roles of MOE were mediated through the lesson study processes, it became more democratic, socializing, interactive and empowering. All parties involved recognized that the lesson study processes could not be completed or even carried out without mutual support and collaboration.

On the other hand, at the micro-level, professional growth occurred in tandem with the degree of support from teachers, who participated in the project, instructional leaders, who coordinated teachers for meaningful, purposeful work on a regular basis, heads of department and school principals whose remarkable presence signaled the importance of teacher work. Such camaraderie reduced competition among teachers and created an “open door” culture of purposeful continuous learning and improvement among teachers, beginning and experienced alike, with the willingness

on the part of teachers to take initiative and to make adjustments for one another. When leadership came from within, and support was teacher-led and ground-up, the practice of innovation was more likely to be effective and sustained.

Lesson study facilitated curriculum innovation by engaging students in their own learning while fostering AfL

Commitment to student learning occurred when the new emphasis shifted focus from teaching to learning and how teachers could help model and demonstrate that learning. This constituted a shift in thinking for teachers used to teacher-centric practices with the teacher as the sole authority of knowledge to one in which the teacher leads, directs and facilitates learning for students.

The growing consciousness of student learning provided the context for the infusion of assessment practices in the classroom. Findings affirmed that teachers became more able to incorporate AfL to influence teaching and to use the information on learning to shape subsequent adjustments to lessons at RL2. Their collection of evidence of student learning had moved from “scant” to “obvious” even as they acquired their “eye on student learning.” As teaching and assessment became mutually reinforcing, the practice made teaching and learning “visible” and, through the assessment, teaching imposed accountability for learning. It further encouraged teachers themselves to take on the role of problem solvers when they begin to problematize student learning. In this regard, it affirmed an observation that has been made by Wenger and Snyder (2000) on how innovative learning can happen when the community encounter emerging problems and share their experiences and knowledge in “free-flowing and creative ways” (p. 140) to deal with budding problems.

More importantly, the use of strategies to learn English provided students with appropriate language experiences that centered on rich stimulus materials and good models of effective language use, a key emphasis in English Language Syllabus 2010. When student learning becomes the “regulator of the curriculum,” attention will be shifted from assessment, drill and examinations to practice, collaboration and engagement with learning.

7. Challenges and future directions

Sustainability remained a problematic issue. This area has to be examined more thoroughly in future studies. The pilot illustrated that “telling” and “reminding” schools about the practice of infusing strategy-rich lessons in the curriculum are important dissemination ideas but, to achieve results, schools need more concrete models. Hawley (1978, p. 229) succinctly reminds us that “the crucial determinant of any given innovation’s success is the willingness of teachers to employ it and do so creatively and selectively in the context of the needs and abilities of their students.” On the same note, McLaughlin and Marsh (1978) reiterate that “even the best educational practice is unlikely to fulfill its promise in the hands of inadequately trained or unmotivated teachers” (p. 69).

If our goal is to strengthen the explicit teaching and learning of English in the classroom, then Project En-ELT can be seen as opening a small window to an important area – teaching and learning English at the lower secondary, the foundational years of secondary schooling. The findings and analysis suggest that the project has sufficient potential to convince teachers of its merit. However, to encourage teachers to continue to play a central role in ensuring the sustainability of the curriculum innovation, project implementation will need to emphasize sustained

exposure to the use of teaching strategies in all classes and appropriate lessons, the sharing of good practices beyond the year level and a sustained transfer of learning among teachers. To refine the quality of classroom practice, there must be the continuous infusion of strategy-rich lessons, deliberately and intentionally, in the school curriculum. To ensure effective implementation there has to be continued, though differentiated, support for all the schools as well as evaluation of the project for evidence to inform practice. The learning continues – at every level.

References

- Ball, D.L., Thames, M.H. and Phelps, G. (2008), "Content knowledge for teaching: what makes it special?", *Journal of Teacher Education*, Vol. 59 No. 5, pp. 389-407.
- Beghetto, R.A. and Kaufman, J.C. (Eds) (2010), *Nurturing Creativity in the Classroom*, Cambridge University Press, Cambridge.
- Brown, H. and Cambourne, B. (1987), *Read and Retell*, Nelson, South Melbourne.
- Carlgrén, I. (2012), "The learning study as an approach for 'clinical' subject matter didactic research", *International Journal of Lesson and Learning Studies*, Vol. 1 No. 2, pp. 126-139.
- Chandrasegaran, A. (1991), "The composing processes of university student writers", unpublished doctoral dissertation, National University of Singapore, Singapore.
- Cobb, P., McClain, K., Lamberg, T. and Dean, C. (2003), "Situating teachers' instructional practices in the institutional setting of the school and district", *Educational Researcher*, Vol. 32 No. 6, pp. 13-24.
- Curriculum Planning and Development Division (2006), "Report of the English language curriculum and pedagogy review", Ministry of Education, Singapore.
- Curriculum Planning and Development Division (2009), *English Language Syllabus 2010: Primary & Secondary (Express/Normal [Academic])*, Ministry of Education, Singapore.
- Eraut, M. (1994), *Developing Professional Knowledge and Competence*, Palmer Press, Washington, DC.
- Fang, Y., Lee, C.K. and Yang, Y. (2012), "Developing curriculum and pedagogical resources for teacher learning: a lesson study video case of 'Division with Remainder' from Singapore", *International Journal of Lesson and Learning Studies*, Vol. 1 No. 1, pp. 65-84.
- Fang, Y., Lee, C.K., Haron, S.T., Wang, X. and Arasaratnam, C. (2009a), "The implementation of lesson study as a teacher-directed form of instructional improvement in a primary school in Singapore", Final Research Report No. CRP 19/05 JW & 11/06 FYP, Centre for Research in Pedagogy and Practice, Singapore.
- Fang, Y.P., Lee, K.E.C. and Haron, S.T. (2009b), "Lesson study in mathematics: three cases from Singapore", in Wong, K.Y., Lee, P.Y., Kaur, B., Foong, P.Y. and Ng, S.F. (Eds), *Mathematics Education – The Singapore Journey*, World Scientific, Singapore, pp. 104-129.
- Fernandez, C., Cannon, J. and Chokshi, S. (2003), "A US-Japan lesson study collaboration reveals critical lenses for examining practice", *Teaching and Teacher Education*, Vol. 19 No. 2, pp. 171-185.
- Fitzpatrick, J.L., Sanders, J.R. and Worthen, B.R. (2004), *Program Evaluation: Alternative Approaches and Practical Guidelines*, 3rd ed., Pearson Education, New York, NY.
- Flower, L.S. and Hayes, J.R. (1980), "The dynamics of composing: Making plans and juggling constraints", in Gregg, L.W. and Steinberg E.R. (Eds), *Cognitive Processes in Writing*, Lawrence Erlbaum, Hillsdale, NJ.
- Flower, L. and Hayes, J.R. (1981), "A cognitive process theory of writing", *College Composition and Communication*, Vol. 32 No. 4, pp. 365-387.

- Gambrell, L., Pfeiffer, W. and Wilson, R. (1985), "The effects of retelling upon reading comprehension and recall of text information", *Journal of Education Research*, Vol. 78 No. 4, pp. 216-220.
- Goodrick, D. (2012), "An introduction to programme evaluation", presentation on programme evaluation to Singapore senior specialists, Ministry of Education, Singapore.
- Goh, C., Zhang, L.J., Ng, C.H. and Koh, G.H. (2005), *Knowledge, Beliefs and Syllabus Implementation: A study of English Language Teachers in Singapore*, National Institute of Education, Singapore.
- Guskey, T.R. (2002), "Professional development and teacher change", *Teachers and Teaching: Theory and Practice*, Vol. 8 Nos 3/4, pp. 381-391.
- Hall, G. and Hord, S. (1987), *Change in Schools: Facilitating the Process*, State University of New York, Albany, NY.
- Hall, G., Loucks, S., Rutherford, W. and Newlove, B. (1975), "Levels of use of the innovation: a framework for analyzing innovation adoption", *Journal of Teacher Education*, Vol. 26 No. 1, pp. 52-56.
- Han, X. and Paine, L. (2010), "Teaching math as deliberate practice through public lessons", *Elementary School Journal*, Vol. 110 No. 4, pp. 519-541.
- Hawley, W.D. (1978), "Horses before carts: developing adaptive schools and the limits of innovation", in Mann D. (Ed.), *Making Change Happen*, Teachers College Press, New York, NY, pp. 224-253.
- Kazemi, E. and Hubbard, A. (2008), "New directions for the design and study of professional development: attending to the coevolution of teachers' participation across contexts", *Journal of Teacher Education*, Vol. 59 No. 5, pp. 428-444.
- Lewis, C. (2000), "Lesson study: the core of Japanese professional development", paper presented at the special interest group on Research in Mathematics Education at the American Educational Research Association meetings, New Orleans, LA.
- Lewis, C. and Tsuchida, I. (1998), "A lesson is like a swiftly flowing river: research lessons and the improvement of Japanese education", *American Educator*, Vol. 22 No. 4, pp. 12-17.
- Lewis, C., Akita, K. and Sato, M. (2010), "Lesson study as a human science", *NSS Yearbook*, Vol. 109 No. 1.
- Lewis, C., Perry, R. and Hurd, J. (2004), "A deeper look at lesson study", *Educational Leadership*, pp. 18-22.
- Lewis, C., Perry, R. and Murata, A. (2006), "How should research contribute to instructional improvement? The case of lesson study", *Educational Researcher*, Vol. 35 No. 3, pp. 3-14.
- Lim, C., Lee, K.E.C., Saito, E. and Syed Haron, S. (2011), "Taking stock of lesson study as a platform for teacher development in Singapore", *Asia-Pacific Journal of Teacher Education*, Vol. 39 No. 4, pp. 353-365.
- Lipson, M. and Wilson, K. (1997), *Assessment and Instruction of Reading and Writing Disability. An Interactive Approach*, Addison-Wesley, New York, NY.
- Lo, M. and Marton, F. (2012), "Towards a science of the art of teaching: using variation theory as a guiding principle of pedagogical design", *International Journal of Lesson and Learning Studies*, Vol. 1 No. 1, pp. 7-22.
- Lo, M., Pong, W.Y. and Pakey, C.P.M. (2005), *For Each and Everyone. Catering for Individual Differences Through Learning Studies*, Hong Kong University Press, Hong Kong.
- Luke, A. and Freebody, P. (1999), "Further notes on the four resources model", *Reading Online* 3, available at: <http://www.readingonline.org/research/lukefreebody.html> (accessed August 1999).

- Luke, A., Freebody, P., Lau, S. and Gopinathan, S. (2005), "Towards research-based innovation and reform: Singapore schooling in transition", *Asia Pacific Journal of Education*, Vol. 25 No. 1, pp. 5-28.
- McLaughlin, M. (1987), "Learning from experience: lessons from policy implementation", *Educational Evaluation and Policy Analysis*, Vol. 9 No. 2, pp. 171-178.
- McLaughlin, M. and DeVogd, G. (2011), "Critical literacy as comprehension: understanding at deeper levels", in Lapp, D. and Fisher, D. (Eds), *Handbook of Research on Teaching the English Language Arts*, 3rd ed., Routledge, New York, NY, pp. 278-282.
- McLaughlin, M.W. and Marsh, D.D. (1978), "Staff development and school change", *Teachers College Record*, Vol. 80 No. 1, pp. 70-94.
- Morris, A.K. and Hiebert, J. (2011), "Creating shared instructional products: an alternative approach to improving teaching", *Educational Researcher*, Vol. 40 No. 1, pp. 5-14.
- Owocki, G. (1999), *Literacy Through Play*, Heinemann, Portsmouth, NH.
- Paine, L.W., Fang, Y. and Wilson, S. (2003), "Entering a culture of teaching", in Britton, E., Paine, L., Pimm, D. and Raizen, S. (Eds), *Comprehensive Teacher Induction: Systems for Early Career Learning*, Kluwer, Dordrecht, pp. 20-82.
- Palincsar, A.S. and Brown, A.L. (1984), "Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities", *Cognition and Instruction*, Vol. 1 No. 2, pp. 117-175.
- Palincsar, A.S. and Brown, A.L. (1986), "Interactive teaching to promote independent learning from text", *The Reading Teacher*, Vol. 39 No. 8, pp. 771-777.
- Patton, M.Q. (2002), *Qualitative Research and Evaluation Methods*, 3rd ed., Sage, Thousand Oaks, CA.
- Perry, R. and Lewis, C. (2008), "What is successful adaptation of lesson study in the US?", *Journal of Educational Change*, Vol. 10 No. 4, pp. 365-391.
- Pressley, M. (2000), "What should comprehension instruction be the instruction of?", in Michael, L., Kamil, P.B., Mosenthal, P., David, P. and Rebecca, B. (Eds), *Handbook of Reading Research*, Vol. 3, Lawrence Erlbaum, Hillsdale, NJ, pp. 545-562.
- Punch, K.F. (2003), *Introduction to Social Research Methods: Quantitative and Qualitative Approaches*, Sage, Thousand Oaks, CA.
- Ritchhart, R. and Perkins, D. (2008), "Making thinking visible in", *Educational Leadership*, Vol. 65 No. 5, pp. 57-61.
- Runesson, U. (2006), "What is it possible to learn? On variation as a necessary condition for learning", *Scandinavian Journal of Educational Research*, Vol. 50 No. 4, pp. 397-410.
- Spillane, J. (2012), "Diagnosis and design for instructional improvement: formal structure and school work practice", paper presented as keynote address at the World Association of Lesson Studies International Conference, November, Singapore.
- Stigler, J.W. and Hiebert, J. (1999), *The Teaching Gap: Best Ideas From the World's Teachers for Improving Education in the Classroom*, Summit Books, New York, NY.
- Strauss, A. and Corbin, J. (1998), *Basics of Qualitative Research*, 2nd ed., Sage, Thousand Oaks, CA.
- Wang, J. and Gu, L. (2007), *Action Education – Innovative Paradigm for Teacher In-Service Learning (xindong jiaoyu – jiaoshi zaizhi xuexi de fanshi gexin)*, East China Normal University Press, Shanghai.
- Wang, J. and Paine, L.W. (2003), "Learning to teach with mandated curriculum and public examination of teaching as contexts", *Teaching and Teacher Education*, Vol. 19 No. 1, pp. 75-94.
- Wenger, E. and Snyder, W.M. (2000), "Communities of practice: the organizational frontier", *Harvard Business Review*, Vol. 78 Nos 1-3, pp. 139-145.

Yang, Y. and Ricks, T.E. (2012), "How crucial incidents analysis support Chinese lesson study", *International Journal of Lesson and Learning Studies*, Vol. 1 No. 1, pp. 41-48.

Further reading

- Anderson, L.W., Krathwohl, D.R., Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J. and Wittrock, M.C. (2001), *A Taxonomy For Learning, Teaching, and Assessing – A Revision of Bloom's Taxonomy of Educational Objectives*, Addison-Wesley, New York, NY.
- Ben-Peretz, M. (2009), *Policy Making In Education – A Holistic Approach in Response to Global Changes*, Rowman & Littlefield Education.
- Bennett, C. (1976), *Analyzing Impacts of Extension Programs, ESC-575*, Extension Service-US Department of Agriculture, Washington, DC.
- Buckingham, A. and Saunders, P. (2004), *The Survey Methods Workbook*, Polity Press, Cambridge.
- Cambourne, B., Labbo, L.D. and Carpenter, M. (2001), "What do I do with the rest of the class: the nature of teaching-learning activities", *Language Arts*, Vol. 79 No. 2, pp. 124-135.
- Carless, D. (1999), "Large-scale curriculum change in Hong Kong", in Kenndey, C., Doyle, P. and Goh, C. (Eds), *Exploring Change in English Language Teaching*, Macmillan Heinemann, Oxford, pp. 19-28.
- Chiarelott, L. (2006), *Curriculum in Context: Designing Curriculum and Instruction for Teaching and Learning in Context*, Thomson Wadsworth, Southbank, Vic.
- Fullan, M.G. (1977), "Research on curriculum and instruction implementation", *Review of Educational Research*, Vol. 47 No. 1, pp. 335-397.
- Fullan, M.G. (1982), *The Meaning of Educational Change*, Teachers College Press, New York, NY.
- Fullan, M. (2008), "Curriculum implementation and sustainability", in Connelly, F.M. (Ed.), *The Sage Handbook of Curriculum and Instruction*, Sage, London, pp. 113-122.
- Gardner, H. (2004), *Changing Minds: The Art and Science of Changing Our Own and Other People's Minds*, Harvard Business School Publishing, Harvard, MA.
- Goh, C.M. and Tay, M.Y. (2008), "Implementing the English language syllabus 2001 in Singapore schools: interpretations and re-interpretations", in Murray, D.E. (Ed.), *Planning Change, Changing Plans: Innovations in Second Language Teaching*, University of Michigan Press, Ann Arbor, MI, pp. 85-107.
- Goh, C.C.M. (1999), "Nationwide curriculum innovation: how do we manage?", in Kennedy, C., Doyle, P. and Goh, C.C.M. (Eds), *Exploring Change in English Language Teaching*, Macmillan Heinemann, Oxford, pp. 5-18.
- Gorsuch, G.J. (2002), "EFL educational policies and educational cultures: influences on teachers' approval of communicative activities", *TESOL Quarterly*, Vol. 34 No. 4, pp. 675-710.
- Gambrell, L., Koskinen, P.S. and Kapinus, B.A. (1991), "Retelling and the reading comprehension of proficient and less-proficient readers", *Journal of Educational Research*, Vol. 84 No. 6, pp. 356-362.
- Hall, G.E., George, A.A. and Rutherford, W.L. (1979), *Measuring Stages of Concern About the Innovation: A Manual For Use of the SoC Questionnaire*, 2nd ed., Research and Development Centre for Teacher Education, The University of Texas at Austin, Austin, TX.
- Heck, S., Stiegelbauer, S.M., Hall, G.E. and Loucks, S.F. (1999), *Measuring Innovation Configurations: Procedures and Applications*, Southwest Educational Development Laboratory (SEDL), Austin, TX.
- Jason, M.H. (2003), *Evaluating Programs to Increase Student Achievement*, Skylight Professional Development, Glenview, IL.

- Kennedy, C. and Kennedy, J. (1996), "Teacher attitudes and change implementation", *System*, Vol. 24 No. 3, pp. 351-360.
- Krathwohl, D.R. (2002), "A revision of bloom's taxonomy: an overview", *Theory Into Practice*, Vol. 41 No. 4, pp. 212-218.
- Lave, J. and Wenger, E. (1991), *Situated Learning: Legitimate Peripheral Participation*, Cambridge University Press, New York, NY.
- Lewis, C. (2002), *Lesson Study: A Handbook of Teacher-Led Instructional Change*, Research for Better Schools, Philadelphia, PA.
- Li, C. (2003), "A study of in-service teachers' beliefs, difficulties and problems in current teacher development programmes", *HKBU Papers in Applied Language Studies*, No. 7, pp. 64-85.
- Little, J.W. (2003), "Professional community and the problem of high school reform", *International Journal of Educational Research*, Vol. 37 No. 8, pp. 683-714.
- Marsh, C.J. (2009), *Key Concepts for Understanding Curriculum*, 4th ed., Routledge, New York, NY.
- Miles, M.B. and Huberman, A.M. (1994), *Qualitative Data Analysis: An Expanded Sourcebook*, 2nd ed., Sage, Thousand Oaks, CA.
- Ng, S.M. (2010), *Proposed Project to Enhance English Language Teaching and Learning at Lower Secondary Levels*, Ministry of Education, Singapore.
- Oczkus, L.D. (2010), *Reciprocal Teaching at Work: Powerful Strategies and Lessons for Improving Reading Comprehension*, International Reading Association, Newark, NJ.
- O'Donoghue, T.A. and Clarke, S. (2010), *Leading Learning: Process, Themes and Issues in International Contexts*, Routledge, New York, NY.
- Patton, M.Q. (2000), "Overview: language matters", in Hopson, R.K. (Ed.), *How and Why Language Matters in Evaluation. New Directions for Evaluation No. 86*, Jossey-Bass, San Francisco, CA, pp. 5-16.
- Polanyi, M. (1967), *The Tacit Dimension*, Roulledge & Kegan Paul, London.
- Runesson, U. and Gustafsson, G. (2012), "Sharing and developing knowledge products from learning study", *International Journal of Lesson and Learning Studies*, Vol. 1 No. 3, pp. 245-260.
- Stufflebeam, D.L. (1977), "Working paper on needs assessment in evaluation", paper presented at the American Educational Research Association Evaluation Conference, April, San Francisco, CA.
- Stufflebeam, D.L. (2001), "Evaluation models", *New Directions for Evaluation*, Vol. 2001 No. 89, pp. 7-98.
- Swartz, R.J. and Parks, S. (1994), *Infusing the Teaching of Critical and Creative Thinking into Content Instruction*, Critical Thinking Press and Software, Pacific Grove, CA.
- Taylor-Powell, E. and Henert, E. (2008), *Developing a Logic Model: Teaching and Training Guide*, University of Wisconsin-Extension, Madison, WI, available at: <http://www.ecu.edu/cs-acad/ipar/customcf/DL/Planing/LogicModelGuide.pdf>
- Taylor-Powell, E. and Renner, M. (2003), *Analysing Qualitative Data*, University of Wisconsin-Extension, Madison, WI.
- Vogler, K.E. (2005), "Improve your verbal questioning", *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, Vol. 79 No. 2, pp. 98-103.
- W.K. Kellogg Foundation (2004), *Logic Model Development Guide*, W.K. Kellogg Foundation, Battle Creek, MI, available at: <http://www.wkcf.org/default.aspx?tabid=101&CID=281&CatID=281&ItemID=2813669&NID=20&LanguageID=0>.
- Weiss, C.H. (1998), "Have we learned anything new about the use of evaluation?", *American Journal of Education*, Vol. 19 No. 1, pp. 21-33.

Wenger, E. (1998), *Communities of Practice: Learning, Meaning and Identity*, Cambridge University Press, Cambridge.

Wholey, J. (1979), *Evaluation: Promise and Performance*, Urban Institute Press, Washington, DC.

Zamel, V. (1982), "Writing: the process of discovering meaning", *TESOL Quarterly*, Vol. 16 No. 2, pp. 195-209.

Corresponding author

Lydia Tan-Chia can be contacted at: lydia_tan-chia@moe.gov.sg

This article has been cited by:

1. Bich H N Nguyen, Rhonda Oliver. 2015. Relationship building in Vietnamese English written business communication: A systemic functional analysis. *Functional Linguistics* 2:1. . [[CrossRef](#)]
2. Bruce Lander Kurume University, Fukuoka, Japan . 2015. Lesson study at the foreign language university level in Japan. *International Journal for Lesson and Learning Studies* 4:4, 362-382. [[Abstract](#)] [[Full Text](#)] [[PDF](#)]
3. Christine Kim-Eng Lee and Lo Mun Ling Christine Kim-Eng Lee National Institute of Education, Nanyang Technological University, Singapore Lo Mun Ling Department of Curriculum and Instruction, The Hong Kong Institute of Education, Hong Kong, P.R. China . 2013. The role of lesson study in facilitating curriculum reforms. *International Journal for Lesson and Learning Studies* 2:3, 200-206. [[Abstract](#)] [[Full Text](#)] [[PDF](#)]