Journal of Educational Research and Indigenous Studies
Volume: 2 (1), 2019
Journal website: www.jerisjournal.com
e-ISSN 2682-759X

E-TECH LP as a tool to upgrade English teachers' lesson planning quality: A case study

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Article Info

Received:
01 August 2019

Accepted:
06 September 2019

Publish
16 September 2019

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e-ISSN 2682-759X

Abstract

Lesson planning is a complex daily routine which causes a significant affliction on English teachers since it requires detailed dissection on pedagogical aspects as well as teaching contents. The intricacy of English lesson plans also leads to the extension of time in preparing them. Moreover, the tedious process of outlining high-quality lesson plans also inflicts a huge burden on teachers such that there are many English teachers who struggle to prepare efficient lesson plans. Hence, E-TECH LP has been developed as an alternative system to assist English teachers in formulating excellent lesson plans in a short span of time. A case study was designed to evaluate the effect of E-TECH LP system on English lesson planning, specifically in terms of quality and time. The findings have shown that less time was required in the preparation process of English lesson plans when E-TECH LP was utilised. Based on the evaluation of the schools' administrators, it was also discovered that E-TECH LP played a substantial role in the production of good lesson plans.

Keyword: lesson plan, ESL, lesson planning, primary school

Introduction

The process of devising lesson plans is considered a complex routine (Ko, 2012; Jones, Jones, & Vermette, 2011; Zazkis, Liljedahl, & Sinclair, 2009) that has been practised by teachers since the 19th century (Golland, 1998). The procedures involved in creating daily lesson plans require English teachers to focus on the manoeuvring of teaching inputs which can be presented holistically and effectively in order to achieve the curriculum objectives. The activities, materials, timelines, and assessment instruments that can determine the impact of teaching are specified in lesson plans (Jensen, 2009; Nesari & Heidari, 2014; Noor Shamshinar, Mohd Salihin Hafizi, Zakiah, Julia, & Haslina, 2017; Sharma, Biswas, Tharu, & Bhatt, 2018) which cause the intricacy of English lesson planning. Regardless of the variety of details, most English lesson plans are identical with regard to the format. In the context of Malaysia, daily lesson plans are specifically

formulated by teachers in preparing for activities to be performed with students in order to accomplish certain learning objectives.

The construction of a lesson plan should include a syllabus that aids teachers to identify students' needs (Harmer, 2015; Tajularipin, Ahmad Fauzi, & Suriati, 2015). English teachers in Malaysia use the curriculum standard that is outlined in an official document, which is known as Dokumen Standard Kurikulum dan Pentaksiran (DSKP), as a guideline in developing the lessons and assessments that are appropriate for students in the English as a Second Language (ESL) classroom. The application of the curriculum standard will prevent English teachers from planning non-focused or non-centralised teaching. Not only does the curriculum standard projected by the Curriculum Development Centre (CDC) focus on the elements that should be achieved by students, it also acts as a medium to assist teachers in evaluating the suitability of activities, textbooks, and teaching aids for teaching and learning session (Celce-Murcia & McIntosh, 2001). Hence, issues during English teaching will be inevitable if the teachers disregard the use of the curriculum standard in English lesson planning.

With the existence of curriculum standards, lesson planning is compulsory agenda emphasised by Malaysia's Ministry of Education. English lesson plans used to be written in lesson planning book manually, but things have recently progressed where more up-to-date platforms and systems have been developed to cater to the needs of the current curriculum of English subject. Lesson plan preparation can be conducted by any means in accordance to the Circular Letter No. 3 of 1999 which states that teaching and learning records can be presented in any form that is reasonable and appropriate to the current technology (Director General of Education Malaysia, 1999). Despite several alternatives being offered to assist English teachers in preparing lesson plans, problematic issues still arise.

Daily Lesson Plans for Teachers

It is compulsory for teachers to prepare lesson plans before going into the classroom to deliver their lessons (Syed Kamaruzaman, 2018; Zaidatol Akmaliah & Habibah, 2000). The completed lesson plans also require approval from supervisors or administrators (Aslina Saad, Chung, & Dawson, 2014; Bullough, 2015). Nevertheless, based on the data from the early survey presented in Figure 1, it is shown that 45.7% of English teachers in the survey failed to prepare lesson plans before conducting lessons, 17.3% never prepared lesson plans, and 28.2% of teachers seldom prepared English lesson plans before teaching session. These results prove that although the teachers were aware of the impact of lesson plans on effective teaching, there were still those who were reluctant to prepare daily lesson plans (Ambusaidi & Al-Farei, 2017; Bridges, 2013; Cunningham, 2009; Danielson, 2011). Clerical work can be considered as the root cause of the difficulties in preparing daily lessons among teachers (Nesari & Heidari, 2014; Normarina, 2015; Raedah, 2013). This circumstance means that the burden from other workload has forced some English teachers to unintentionally abandon their duty in preparing lesson plans. Sarani & Rezaee (2017) and Nesari & Heidari (2014) have discovered that teaching experience influences the attitude towards lesson planning in which more experienced teachers have been pessimistic about the preparation of lesson plans. Many unnecessary consequences may occur due to these negative attitudes. Furthermore, according to Raedah (2013), the inability to prepare lesson plans by teachers is one of the prominent issues that have been encountered by most school administrators. This problem has caused a negative impact on the process of creating meaningful learning (Bridges, 2013) in addition to reducing the teaching quality which is perturbing to the stakeholders (Normarina, 2015).

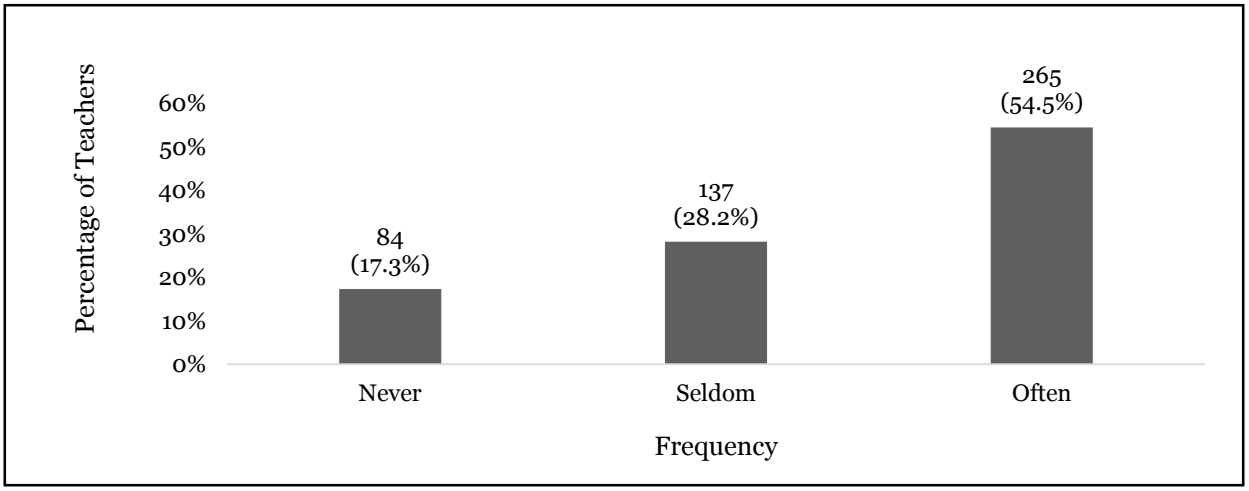

Figure 1. Percentage of teachers completing lesson plans before the teaching session

In addition, planning for an instructional content for English subject requires the designer to be meticulous in scrutinising each component of the lesson plan (Sharma et al., 2018). The whole process of designing lesson plans is time-consuming as teachers need to provide specific details of each element that will be addressed during the teaching session (Amador, 2010; Aslina & Dawson, 2018; Bümen, 2007; Cunningham, 2009; Nesari & Heidari, 2014). Higton, et al. (2017) and Matanin & Collier (2003) reported that a teacher spends around six to nine hours weekly for the preparation of lesson plans and they are frustrated with this situation (Shalem, De Clercq, Steinberg, & Koornhof, 2018). Similarly, teachers in Malaysia allocate 90 minutes daily to prepare lesson plans for sessions of the following day (Abdull Sukor, Abd. Rahim, & Mohamad Yazi, 2006; Zurina & Sanitah, 2014). Based on these findings, it is evident that lesson planning is a complex task as teachers must put on their thinking cap to complete this tedious task every day. Accordingly, some teachers begin to think that other professional responsibilities such as developing materials and instrument for the assessment, as well as mastering the content for the next lesson should be given a higher emphasis (Shalem et al., 2018).

Furthermore, the quality of lesson plans developed by teachers has been a controversial issue among school leaders. According to Fazleen Mohamad and Siti Noor Ismail (2018), the data acquired from the Inspectorate of Schools revealed that only 13% was given to the quality of teaching among teachers, and the quality of lesson plans produced by teachers is also considered as a striking issue that deserves more attention. Hence, although lesson plans play a vital role in determining the effectiveness of instructional implementation, the data implies that lesson plans have not been developed efficiently (Chizhik & Chizhik, 2018). It has also been found that teachers are prone to writing simple lesson plans (Kitabchy, 2017; Sharma et al., 2018) as they are reluctant to produce detailed lesson plans according to the way they have learnt previously (Sawyer & Myers, 2018). Additionally, it is evident from the data presented in Figure 2 below that 22.6% of English teachers in Malaysia were merely recycling previous lesson plans without aligning them to the learners' needs. These results correlate with the study done by Boikhutso (2010) where recycling previous lesson plans without catering to the learners' needs has become a new worrying trend among teachers. It should also be emphasised that teachers are burdened by the abundance of clerical works (Chughati & Perveen, 2013) which is perceived as the root cause of the low-quality lesson plans produced by English teachers in schools. Consequently, lesson plans of poor quality will affect the implementation of the instructional content, thus leading to less impactful

English learning. Therefore, a new intervention is necessary to assist teachers in improving the quality of lesson plans, particularly for English subject.

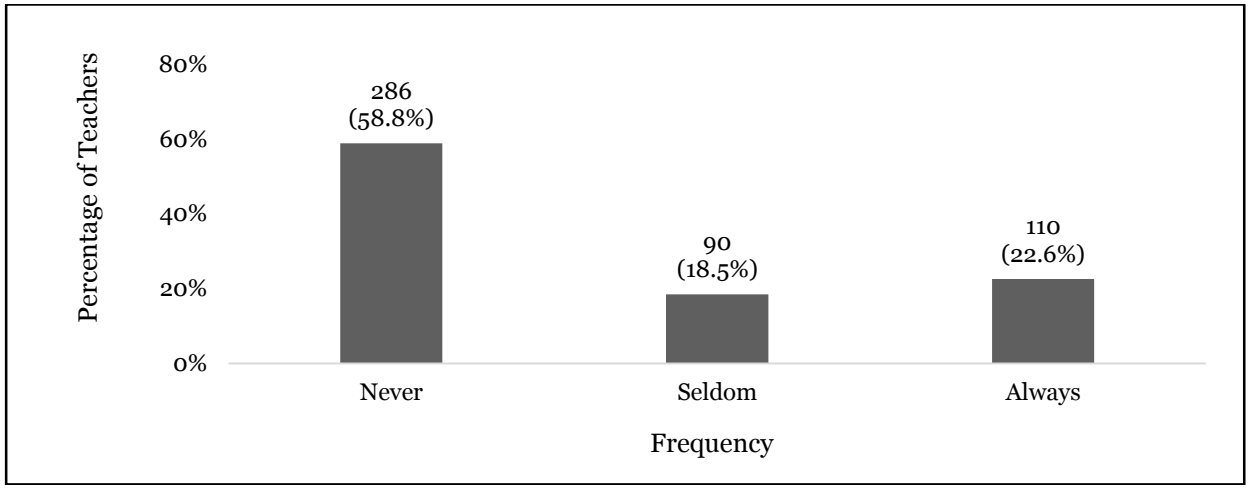

Figure 2. Percentage of teachers recycling lesson plans without aligning to the learners' needs

So, based on these unresolved issues of lesson planning in educational system, a new lesson planning system, namely E-TECH LP has been created to provide ubiquitous chance to every English teacher access to devise daily lesson plans. E-TECH LP has been developed using Visual Basic for Applications (VBA) which can help teachers to automate tasks in lesson planning. It is designed to run on computer to help teachers in planning daily lesson plans at any time, from anywhere without the need of Internet connection.

Accordingly, this paper presents an evaluation of the effectiveness of E-TECH LP usage in lesson planning. The following sections will outline the research questions, methodology, literature review, results, as well as conclusions from the research.

Research Objectives

The present study addresses the questions as follows:

a) To identify the level of compliance and accuracy of teaching and learning records submission weekly supervision purposes before and after using E-TECH LP.
b) To examine the use of E-TECH LP in helping teachers to prepare lesson plans on time.
c) To identify improvements in the quality of lesson plans using E-TECH LP compared to the previous method.

Literature Review

Detailed English daily lesson plans produced by teachers will enable each student's needs to be fulfilled (Lynch & Warner, 2008; Nagro, Fraser, & Hooks, 2018). According to Rusznyak & Walton (2011), the outcome of a lesson greatly reflects the lesson plan which is considered as the scaffolding in the development of Pedagogical Content Knowledge (PCK). Nonetheless, teachers must encounter a great challenge in preparing quality lesson plans since every element of teaching

in terms of input, process, and output aspects should be specified (Amador, 2010; Bümen, 2007; Cunningham, 2009; Gülten, 2013; Nesari & Heidari, 2014). Due to the complexity of the preparation process, the authority is responsible to facilitate trainee teachers in preparing quality daily lesson plans by considering all aspects of the prescribed teaching (John, 2006). Also, each trainee teacher must have the initiative to equip themselves with strong pedagogical principles as well as basic teaching knowledge to ensure that they are ready to produce impactful lesson plans (Choy, Wong, Lim, & Chong, 2013). Mastery of lesson planning skills should be at a higher level of discourse to ensure that teachers understand the significance of designing quality daily lesson plans in accordance with the standards.

The Ministry of Education Malaysia (2010) has also established clear guidelines in the Malaysian Education Quality Standards with regard to the preparation of daily lesson plans where teachers are required to state the learning objectives based on the yearly scheme activities in order to achieve the teaching and reflection objectives of each lesson plan. Boikhutso (2010) and Golland (1998) further claimed that each teacher is not simply planning a lesson, but based on the targeted teaching objectives, the teacher must be sensitive to the students' needs during the teaching and learning process so that the impact of learning outcomes can be maximised. Furthermore, discussion among teachers is encouraged to examine the appropriate standards in constructing the learning objectives in the preparation of effective daily lesson plans (Jensen, 2009; Shen, Poppink, Cui, & Fan, 2007). It can be said that the development of lesson plans is a meaningful technical element in which the teacher devises a conducive learning environment that supports progressive teaching and learning process (Choy, Wong, Lim, & Chong, 2013).

The preparation of daily lesson plans has been found to impose a significant burden on teachers. According to Aslina & Dawson (2018) and Cunningham (2009), teachers are forced to spend more time in preparing the lesson plans before this task can be accomplished perfectly. The total time spent by teachers to complete a lesson plan for each class is not less than 30 minutes (Abdull Sukor et al., 2006; Shen et al., 2007; TNS BMRB, 2014). Due to the time constraint, problems in relation to the development of quality daily lesson plans arise (Nor Fadilah Nadzri, 2017; Inspectorate of Schools, 1998). Hence, technological advancement is considered as a significant catalyst that is capable of addressing the issues raised in the preparation of daily lesson plans. According to Reigeluth (2012), apart from being one of the efficient teaching tools, technology also plays a crucial role in helping teachers to plan their lessons efficiently. Hence, the development of E-TECH LP serves as an alternative that can assist English teachers in preparing daily lesson plans.

Recently, there have been several built-in online lesson planners or templates being developed for teachers around the world, such as PlanbookEdu and Commoncurriculum. Even though both of these online templates do not fit the educational context in Malaysia, there is one particular on-going online lesson planner constructed by a local programmer called RPH Online. It has been proven that the use of RPH Online can lessen the teachers' burden in writing lesson plans as well as assisting administrators in reviewing them (Zurina & Sanitah, 2014).

Nonetheless, there is still a constraint on the use of this alternative in facilitating the preparation of lesson plans. According to Noraini, Hamidon, & Mohd Izham (2015), unsatisfactory Internet access poses a major challenge to most school staff in this country in performing online tasks. Many teachers have also mentioned that the unreliable and inconsistent quality of Internet connection has been the main problem in the process of preparing online lesson plans (Zurina & Sanitah, 2014). The low quality of Internet services at schools plays a significant role in the day-to-day activities or tasks requiring Internet access such that all online tasks will be delayed when the connection lags (Abdul Razak & Norazlina, 2010). Therefore, RPH Online is not the best

alternative to resolve the problems related to lesson planning among teachers in Malaysia if the problem of slow Internet connection persists.

Methodology

E-TECH LP is a new initiative that requires a further evaluation since it is considered as an alternative to address the problems associated with the preparation of lesson plans. Accordingly, the selection of case study as the research method to explain the application of E-TECH LP among English language teachers in primary schools is seen as the most appropriate step. Case studies focus on small instances that are expected to present a view of the case population (Gerring, 2007), allowing researchers to obtain diverse data in great details (Abd Khahar, 2012). The value of validity and reliability of the research findings can also be increased due to the variety of data. Three English teachers who will be referred to as Teacher X, Teacher Y, and Teacher Z who currently teach in Kulim district were selected as the research participants. It should be noted that they have had at least five years of English teaching experience and had undergone the same study process, namely (a) daily diary writing, (b) observation, and (c) interview.

The researcher divides the study into 3 main phases. The first phase involves the writing of daily diaries by the participants. Given that the study used a qualitative research method (case study) and only 3 research participants were involved, the use of daily diaries could effectively record the progress of the study. This enables the researcher to explore the feelings, emotions and views of the research participants while using E-TECH LP.

The second stage involves the observation of the use of E-TECH LP. The researcher conducts observations of 3 to 5 weekly lesson plans based on the observation protocol. As this study involved 3 participants, the observations will be recorded using Microsoft Encoder for research purposes to analyse the study data. The main aspects noted were the benefits of using E-TECH LP and the ease of use of E-TECH LP in the preparation of lesson plans.

The third stage is the interview session. The interview sessions are divided into two - interviews with English teachers involved in the study and interviews with their administrators. The interview conducted with the teachers involved is intended to obtain detailed information on the use of E-TECH LP when setting up lesson plans. For each interview, the research participants were asked questions related to lesson plans, lesson planning process, problems encountered in preparing daily lesson plans and the effectiveness of E-TECH LP in helping teachers. The questions asked also include the influence of lesson plans on the teaching and learning process that answers the research questions. During the interview, each research participant was asked to personalize their views of the use of the E-TECH LP in detail. This procedure allows the research participants to express their views verbally and spontaneously. The 40-minute interview will be conducted once after 8 weeks of using the E-TECH LP. Voice recorders are used during the interviews to avoid participants' discomfort during the interview sessions. Meanwhile, the interviews with their administrators, namely Headmaster X, Headmaster Y, and Headmaster Z, were conducted to add the validity of the data collected from the three main participants in interviews and daily diaries. Additionally, administrators are also asked to comment on the issue of engagement on lesson plans. This includes the quality that administrators expect from teachers in lesson planning. The 40-minute interview will be conducted once in the last week of the study. The content of the interviews is more likely to answer the whole question of this study.

However, if there are discrepancies between daily diaries, interview transcripts and field notes from observations, then researchers should triangulate to ensure consistency in the information

collected. Consequently, the use of triangulation in the analysis of the findings would increase the validity and reliability of the findings before any reports are presented.

Data Analysis

a) Level of compliance and accuracy of teaching and learning records submission by teachers to administrators for weekly supervision purposes before and after using E-TECH LP

As discussed earlier, there are some teachers who fail to comply with the submission schedule of teaching and learning records for observation purposes by school administrators although it has been outlined in the Pemantauan Kurikulum Berkualiti (PKB) issued by Jabatan Pelajaran Negeri Kedah (2010).

The improvement of teachers' discipline was the major theme extracted from the interview sessions. Furthermore, positive feedback was obtained from the participants after using E-TECH LP. The participants believed that E-TECH LP has helped to prevent them from delaying the submission of teaching and learning records for weekly observations. The application of E-TECH LP encouraged the participants to prepare lesson plans earlier and on time, enabling them to comply with the submission schedule of teaching and learning records to the school administration for weekly review.

Similar positive progress was also reported by the administrators. According to Headmaster X, teacher X has successfully adhered to the submission schedule of teaching and learning records that have been set to complement the PKB elements.

Headmaster X:	*Alhamdulillah, this year, I have seen Teacher X always submits the lesson plan record on Thursdays. If Teacher X needs to attend a course on Thursday, he would send after-school time on Wednesday, one day before the course.*

This positive result is also supported by the analysis of lesson plan record submission for weekly review by administrators as illustrated in Table 1. Contrastingly, Headmaster Y stressed that Teacher Y had no problem sending teaching and learning record before and after the adoption of E-TECH LP. Hence, no difference was detected for the participant at School Y as a strict discipline was enforced by Headmaster Y.

Headmaster Y:	*Honestly, if comparison is made between 2015 and 2016, there's nothing different. As I have informed my teachers. In 2015, I have been very strict with my teachers. There is no late submission of lesson plan record.*

Table 1
Analysis of lesson plan record submission for weekly review by administrators

Week	Teacher X		Teacher Y		Teacher Z	
	Mandatory Date of Submission	Date Submitted by Teacher	Mandatory Date of Submission	Date Submitted by Teacher	Mandatory Date of Submission	Date Submitted by Teacher
1	7/1	7/1	7/1	7/1	7/1	7/1
2	14/1	14/1	14/1	14/1	14/1	14/1
3	21/1	21/1	21/1	21/1	21/1	21/1
4	28/1	28/1	28/1	28/1	28/1	28/1
5	4/2	4/2	4/2	4/2	4/2	4/2
6	Chinese New Year					
7	18/2	*17/2	18/2	18/2	18/2	*17/2
8	25/2	25/2	25/2	25/2	25/2	25/2
9	2/3	2/3	2/3	2/3	2/3	2/3
10	10/3	10/3	10/3	10/3	10/3	10/3

** The lesson plan record was submitted a day earlier.*

b) Teachers' ability to prepare lesson plans on time using E-TECH LP

The use of E-TECH LP is seen as a transformation in improving the efficiency of lesson plans by English teachers. Based on the analysis of daily diaries recorded by the participants (Table 2, 3, and 4), the average time spent for lesson planning using E-TECH LP was only 10 minutes (Table 5).

Table 2:
Analysis of time taken in lesson planning using E-TECH LP by Teacher X

No.	Date of Teaching and Learning Session	Date of Lesson Plans Prepared	Number of Lesson Plans	Lesson Plan Preparation		Total Time	Average Time (Minutes per lesson plan)
				Starting Time	Finishing Time		
1	3/1	1/1	3	8:05 PM	9:07 PM	1:02	0:20
2	4/1	3/1	3	1:55 PM	2:33 PM	0:38	0:12
3	5/1	4/1	3	1:52 PM	2:34 PM	0:42	0:14
4	6/1	5/1	3	12:17 PM	12:56 PM	0:39	0:13
5	7/1	**6/1	3	1:40 PM	2:21 PM	0:41	0:13
6	10/1	7/1	3	2:00 PM	2:38 PM	0:38	0:12
7	11/1	10/1	3	1:50 PM	2:22 PM	0:32	0:10
8	12/1	11/1	3	1:55 PM	2:28 PM	0:33	0:11
9	13/1	12/1	3	2:03 PM	2:38 PM	0:35	0:11
10	14/1	**13/1	3	2:34 PM	3:07 PM	0:33	0:11

11	*17/1	14/1	3	1:54 PM	2:31 PM	0:37	0:12
12	18/1	*17/1	3	9:30 PM	9:57 PM	0:27	0:09
13	19/1	18/1	3	8:33 PM	9:04 PM	0:31	0:10
14	20/1	19/1	3	1:33 PM	2:03 PM	0:30	0:10
15	21/1	**20/1	3	1:23 PM	1:51 PM	0:28	0:09
Average Time of The Lesson Plan Preparation Using E-TECH LP							0:12

The number of lesson plans to be prepared represents the number of classes involved in teaching and learning sessions for the day.

* *Public Holiday - Sultan of Kedah's Birthday*

** *Observation Conducted by Researcher on Lesson Planning using E-TECH LP*

Table 3:
Analysis of time taken in lesson planning using E-TECH LP by Teacher Y

No.	**Date of Teaching and Learning Session**	**Date of Lesson Plans Prepared**	**Number of Lesson Plans**	**Lesson Plan Preparation**		**Total Time**	**Average Time (Minutes per lesson plan)**
				Starting Time	Finishing Time		
1	3/1	1/1	3	6:15 PM	6:45 PM	0:30	0:10
2	4/1	3/1	3	1:47 PM	2:17 PM	0:30	0:10
3	5/1	**4/1	3	2:55 PM	3:28 PM	0:33	0:11
4	6/1	5/1	3	1:26 PM	1:56 PM	0:30	0:10
5	7/1	6/1	3	2:04 PM	2:31 PM	0:27	0:09
6	10/1	7/1	3	1:59 PM	2:26 PM	0:27	0:09
7	11/1	10/1	3	1:39 PM	2:09 PM	0:30	0:10
8	12/1	**11/1	3	2:05 PM	2:32 PM	0:27	0:09
9	13/1	12/1	3	2:15 PM	2:42 PM	0:27	0:09
10	14/1	13/1	3	1:34 PM	2:01 PM	0:27	0:09
11	*17/1	14/1	3	1:05 PM	1:29 PM	0:24	0:08
12	18/1	*17/1	3	3:00 PM	3:30 PM	0:30	0:10
13	19/1	**18/1	3	1:50 PM	2:17 PM	0:27	0:09
14	20/1	19/1	3	2:33 PM	3:00 PM	0:27	0:09
15	21/1	20/1	3	1:45 PM	2:12 PM	0:27	0:09
Average Time of a Lesson Plan Preparation Using E-TECH LP							0:09

The number of lesson plans to be prepared represents the number of classes involved in teaching and learning sessions for the day.

* *Public Holiday - Sultan of Kedah's Birthday*

** *Observation Conducted by Researcher on Lesson Planning using E-TECH LP*

Table 4:
Analysis of time taken in lesson planning using E-TECH LP by Teacher Z

No.	Date of Teaching and Learning Session	Date of Lesson Plans Prepared	Number of Lesson Plans	Lesson Plan Preparation		Total Time	Average Time (Minutes per lesson plan)
				Starting Time	Finishing Time		
1	3/1	2/1	3	10:15 AM	11:00 AM	0:45	0:15
2	4/1	3/1	3	1:00 PM	1:33 PM	0:33	0:11
3	5/1	4/1	3	1:52 PM	2:19 PM	0:27	0:09
4	6/1	**5/1	3	2:40 PM	3:19 PM	0:39	0:13
5	7/1	6/1	3	2:09 PM	2:39 PM	0:30	0:10
6	10/1	7/1	3	12:59 PM	1:29 PM	0:30	0:10
7	11/1	10/1	3	2:19 PM	2:46 PM	0:27	0:09
8	12/1	11/1	3	1:08 PM	1:35 PM	0:27	0:09
9	13/1	**12/1	3	2:02 PM	2:32 PM	0:30	0:10
10	14/1	13/1	3	12:30 PM	12:57 PM	0:27	0:09
11	*17/1	14/1	3	3:05 PM	3:29 PM	0:24	0:08
12	18/1	*17/1	3	10:00 PM	10:27 PM	0:27	0:09
13	19/1	18/1	3	1:13 PM	1:37 PM	0:24	0:08
14	20/1	**19/1	3	2:32 PM	2:59 PM	0:27	0:09
15	21/1	20/1	3	1:45 PM	2:12 PM	0:27	0:09
Average Time of a Lesson Plan Preparation Using E-TECH LP							0:09

The number of lesson plans to be prepared represents the number of classes involved in teaching and learning sessions for the day.

* *Public Holiday - Sultan of Kedah's Birthday*

** *Observation Conducted by Researcher on Lesson Planning using E-TECH LP*

Table 5

Analysis of total average time taken in lesson planning using E-TECH LP by all participants

No.	Research Participant	Average Time (Minutes per lesson plan)
1	Teacher X	0:12
2	Teacher Y	0:09
3	Teacher Z	0:09
Total Average Time of Lesson Plan Preparation Using E-TECH LP		0:10

The interview transcripts performed with the three participants and their headmasters also revealed that the resulting pattern was parallel with the average time analysis for lesson plan preparation using E-TECH LP. This situation also explained the increment in efficiency level of lesson planning recorded by teachers.

Teacher X:	*If I look at my Daily Diary, the average duration in a day to prepare a lesson plan for one class is 9-10 minutes.*
Teacher Y:	*Based on what I have noted in the Daily Diary, I need 10 minutes to prepare a lesson plan for a class. That would be the longest. I've also done it within eight minutes. It depends on the instructional content as well. If writing skills and grammar are involved, it is a little bit difficult because I need to include many elements in the lesson plan.*
Teacher Z:	*During the first week that I used E-TECH LP, it did take longer; 15 minutes or less for one lesson (1 hour). But now in 8 - 9 minutes, a lesson plan can be prepared.*
Headmaster Y:	*The average duration to produce a lesson plan is just 10 minutes. The longest 10 minutes. I was surprised to hear that he said that. I was shocked; how can a very detailed lesson plan be produced within 10 minutes? Illogical. If you want to know, I just instruct the teacher to prepare the lesson plan in front of me because I want to see if it can be completed in 10 minutes. Yes, indeed. Amazing…*

Nevertheless, based on the participants' daily diaries, the time spent on lesson planning was influenced by several aspects, namely the comfort and efficiency of the use of E-TECH LP. Experienced teachers who used E-TECH LP were more likely to complete a lesson plan within a short period of time. It was also acknowledged that the discomfort factor while using E-TECH LP under the researcher's observation would cause longer time.

Teacher X:	*I am still less skilled in handling E-TECH LP. I referred to the user manual that has been provided several times. So, it took me almost an hour to complete 3 lesson plans.*
Teacher Z:	*Since I know that the way I use E-TECH LP is recorded, I felt so nervous. New experience. So, preparing a lesson plan today is a little bit longer: 34 minutes. Perhaps, the nervousness affects the duration of lesson plan preparation.*

Based on the data analysis, it was discovered that the average time needed to design lesson plans has a great influence on the efficiency; the smaller the average time required for lesson plan preparation, the higher the efficiency.

c) Quality of lesson plans when using E-TECH LP compared to the previous method

The use of E-TECH LP has been a turning point when all three headmasters responded positively in the interview. Consequently, this opinion creates a belief that E-TECH LP has helped the three teachers in ensuring the outline of lesson plans is well-organised. Furthermore, Teacher Z also claimed that the layout of the lesson plans provided through E-TECH LP is more neatly.

Headmaster X:	*Most importantly, the layout of the lesson plan is neat and orderly. If the inspectorate of the schools come, they will be satisfied.*
Headmaster Y:	*It is very neat and adheres to the standard I had hoped for.*
Teacher Z:	*What I can say, the layout of the lesson plans that I prepare is now neater and more orderly. It's easier to refer to before the teaching and learning sessions.*

Moreover, the systematic and detailed aspects that are embedded in the lesson plans prepared using E-TECH LP were also reviewed by the participants. After using E-TECH LP, the improvement in terms of the quality of the lesson plans have been observed. The participants have also managed to prepare their lesson plans more systematically and precisely.

Based on the interviews with all three administrators, they were satisfied with the quality of the lesson plans prepared by the teachers. This finding can be seen in the transcripts below.

Headmaster X:	*But by using E-TECH LP, I can see the lesson plan produced by Teacher X is more detailed and systematic.*
Headmaster Y:	*After he uses E-TECH LP, I can see that the lesson plans are more detailed.*
Headmaster Z:	*In 2016, there seemed to be a change. Teacher Z's lesson plan makes me happy. Packed and compact. All aspects are provided. I think it's complete.*

Based on the data presented above, it is evident that lesson plans generated using E-TECH LP are more systematic and comprehensive. It can be concluded that E-TECH LP allows teachers to achieve the optimum quality in the preparation of lesson plans.

Discussion: Summary of Study Findings

In this section, the findings of the study including the improvement of teachers' discipline, the improvement of efficiency, the quality of teaching, and the effectiveness of E-TECH LP in the preparation of lesson plans among primary school teachers of English subject will be discussed. A significant improvement has been discovered specifically in terms of teachers' discipline. It was found that this discipline was driven by the improvement of the efficiency level highlighted in the

findings. The quality aspect of the lesson plans constructed using E-TECH LP will also be addressed such that it indirectly affected the preparation of teaching and learning processes in the classroom. Furthermore, the effectiveness of the E-TECH LP programme has also contributed in reducing the time needed to prepare the lesson plans, increased teachers' motivation and readiness of teachers, as well as made teachers' tasks more flexible.

Furthermore, the constraints faced by teachers in the preparation of lesson plans are also addressed by the current research. For instance, problems in terms of submission of teaching and learning records have been identified. Similarly, the aspect of time in the development of lesson plans also affects the quality of the lesson plans produced by teachers. Hence, interventions should be implemented to resolve the issues with reasonable justification. Questions and problems will be addressed through the themes contained in the formulas, discussions, research implications and suggestions to improve on the methods involved in order to prevent recurring problems with regard to the preparation of lesson plans.

a) Improving teachers' discipline

The findings of this triangulation study showed that the research participants had complied with the submission schedule of teaching and learning records as set by the administrators. Although it was acknowledged by two of the participants that there were issues in sending instructional and learning records for review before E-TECH LP was adopted, the same problems did not resurface throughout the use of E-TECH LP. This outcome illustrates that E-TECH LP has positively affected the research participants' discipline such that the weekly submission schedule was abided. An impressive impact was observed in changing the previous scenario where late submissions were much more common. The dilemma of failing to send teaching and learning records as claimed by Nor Fadilah, 2017 can also be prevented.

In fact, this outcome will also help to strengthen the intention to use technology. The probability of using E-TECH LP is further increased if it is based on the intention to use technology in influencing the discipline of preparation and submission of teaching and learning records among teachers.

b) Improving the level of efficiency

The findings have recorded an increase in the efficiency level based on the difference between the average time of lesson plan preparation with and without the application of E-TECH LP system. Furthermore, the research participants have agreed that the time taken to develop the lesson plans was longer when E-TECH LP was not employed due to the need to review and copy 'Content Standard' and 'Learning Standard' from DSKP. The use of conventional methods such as writing has also lengthened the time taken by teachers in preparing the lesson plans. As stated in the findings, teachers who used conventional methods had to spend at least 15 - 20 minutes to prepare one piece of lesson plan compared to using E-TECH LP which only took 10 minutes on average. Hence, it is evident that technological convenience can increase the efficiency of the lesson plan preparation. The teachers were still able to prepare a lesson plan using E-TECH LP in a short period of time although they do not have high computer literacy.

c) Quality of lesson plans produced using E-TECH LP

The quality aspect of the lesson plan provided by the teachers has been evaluated in terms of two themes, namely the organisation of daily lesson plans layout and systematic and detailed lesson plans. Even though the time taken to produce lesson plans using E-TECH LP was shorter than that of the conventional methods, the completed daily lesson plans were still neat. The research participants and administrators have also expressed their satisfaction with regard to the quality of the daily lesson plans designed using E-TECH LP. The administrators have also voiced their views on the minutiae seen through the lesson plans prepared by the teachers. Additionally, a complete lesson plan that meets the criterion of 21st-century learning can be developed using E-TECH LP as this system is based on the theory of teaching by Gagné which allows users to refine every aspect of planning in a practical way.

It must be noted that the E-TECH LP format was developed according to six elements that were initially proposed by Hughes (2014) which are (i) pupils' language proficiency level, (ii) content and language objectives, (iii) the learning standards, (iv) the learning materials, (v) the sequence of activities, and (iv) the assessment procedures. In addition to Gagné's teaching theory, the suggestion made by Nesari & Heidari (2014) have also been considered in constructing the format of E-TECH LP where every aspect was fine-tuned for maximum impact. Finally, it can be concluded the format employed in the E-TECH LP system is described as detailed and systematic and it fulfils the standards set by the administrators themselves.

Recommendation

Based on the discussion above, it is suggested that thorough follow-up research should be extended to all English primary school teachers in Malaysia. This recommendation is proposed so that generalisation can be made with a bigger size of population. The current research has also discovered that E-TECH LP plays a substantial role in the preparation process, the implementation of teaching and learning, as well as the level of readiness and motivation of teachers. Thus, each aspect of the effectiveness of E-TECH LP in preparing lesson plans for English subject should be discussed in the forthcoming studies. Future research that focuses on the element or theme of effectiveness will allow for accurate findings and specific discussions. It can be concluded that the present study serves as a significant contribution in helping teachers to employ the necessary aspects in teaching, thus, enabling the education system to keep up with the global advancement in relation to the practice of 21st Century Learning.

Conclusion

This study has examined the effectiveness of the use of E-TECH LP in assisting primary school teachers to prepare lesson plans for English subject. Details of the average duration of the lesson plan preparation have been presented set out in the findings. Compliance with the submission schedule of teaching and learning records has also been defined as part of the relevant elements to investigate the effectiveness of the daily lesson plans. In addition, the quality of the lesson plans produced by the participants was also assessed. In conclusion, the research findings have resolved all issues related to the use of E-TECH LP in lesson plan development by means of the triangulation process.

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