Technical vocabulary acquisition using the online learning approach among aircraft maintenance learners

Jeremy Ivan [*a], Pramela Krissh[b]

[a]School of Social Sciences and Humanities, Nilai University, Negeri Sembilan Malaysia.
[b]English Language Department. Universiti Kebangsaan Malaysia.

[*]Corresponding author and e-mail: Jeremy Ivan, jeremy@nilai.edu.my

Abstract

Aircraft maintenance graduates require an ever-increasing range of English language skills to maintain relevance with the global change of the new millennium. Writing field reports using the correct technical vocabulary is a significant component for the aircraft maintenance learners, and the knowledge of technical vocabulary can be considered a prominent element for the Aircraft Maintenance engineer. Therefore, this study focuses on the aircraft maintenance learner's integration of the technical vocabulary terms used correctly in their report writing. The impact on report writing comprises of various elements, including the knowledge of technical vocabulary and integrating it into the field report. In the classroom, a lack of sufficient information and technical vocabulary acquisition serves only to undermine the image of the learner, but this can be tackled by the online learning approach. The online learning approach offers a unique opportunity that can enhance report writing skills and it emphasises a more experiential approach to learning. The participants of this qualitative study comprise of 14 participants. The researcher used interview for gaining the data. The findings of the study will contribute to the field of aircraft maintenance by providing insights into acquiring technical vocabulary through efficient online teaching and learning activities and methods.

Keywords: *Aircraft maintenance learners; Technical vocabulary; Online learning approach; Report writing.*

1. INTRODUCTION

In the aviation industry, effective communication is extremely significant to ensure swift flight operations and safe take-off and landing (Torquato, 2004). Miscommunication or misunderstanding in pilot controller communication can lead to loss of human lives. Furthermore, effective communication is vital to ensure expeditious flight operations and safe take-off and landing. Miscommunication or misunderstanding in pilot controller communication can lead to loss of human lives (Haryani and Wong, 2019). The nature of language and the ways it is interpreted by an individual could lead to misunderstanding, even when the aircraft maintenance engineer can write a report and speak English fluently. Clearly, the aircraft maintenance engineers should always avoid any linguistic misunderstanding when a writing field report. Kutz (2000)

noted that the uncertainty and vagueness in transmitting meaning through non-standard phraseology in writing a field report could lead to catastrophe. Conversely, according to Khoshnoud and Karbalaei (2015), second language learners performed better when acquiring vocabulary through online compared to those students who underwent the conventional method of learning vocabulary. This is because learners discovered that by engaging actively in the online learning process, it enhanced their long—term memory and they benefited greatly from instruction through online learning. Thus, this study was set out to find how the online learning approach can be used to enhance the technical vocabulary acquisition among aircraft maintenance (ACM) students at a private university in Malaysia. Specifically, it attempts to answer the following research question: How do the students acquire the technical vocabulary in the current English language course?

2. METHODOLOGY

The current qualitative study used the thematic analysis approach. A qualitative research paradigm was employed because of its flexibility and ability to reflect on the participants' views, goals, as well as providing a wide variety of views and opinions regarding the phenomena of the research topic. This study took place in a private university in Nilai, Negeri Sembilan. 14 students from the Year 1 aircraft maintenance diploma programme participated in this study, whose age range was between 19 and 21 years. Interestingly, although this course is a popular choice among male students, there were 3 female students enrolled in this course. In terms of English language proficiency, most of the students had low proficiency levels, based on their Sijil Pelajaran Malaysia (SPM) result, which is a national examination for secondary school students who wish to pursue tertiary education. Majority of the students in this study obtained B or C grades, while only 10% obtained A or B grades in the national examination (Table 1). Participants provided written consent for the data collected for data collection purposes; and their names are kept confidential, and each of them is represented by a code number.

Table 1:   Participants Demographic Data

No.	Participants	Gender	Age	Native Language	SPM English Language Result
1	Participant 1	Male	19	Chinese	C-
2	Participant 2	Male	21	Malay	C+
3	Participant 3	Male	20	Malay	C
4	Participant 4	Female	19	Tamil	B+
5	Participant 5	Female	21	Chinese	A
6	Participant 6	Male	20	Chinese	C+
7	Participant 7	Male	20	Chinese	C
8	Participant 8	Male	19	Chinese	C
9	Participant 9	Male	19	Chinese	B-
10	Participant 10	Female	19	Chinese	B+
11	Participant 11	Male	21	Tamil	C-
12	Participant 12	Male	19	Chinese	A
13	Participant 13	Male	21	Chinese	B-
14	Participant 14	Male	19	Tamil	A

Owing to the current lockdown implemented in Malaysia, due to the outbreak of COVID-19, the interview sessions were conducted online utilising Google Meet platform. The researcher prepared the semi-structured interviews questions. The interview protocol was reviewed by professionals prior to the data collection process to ensure credibility. Each interview with the participant lasted almost 45 minutes. The interview sessions were audiotaped and transcribed verbatim. Subsequently, the interview transcripts underwent the process of coding, which categorizes and labels the text for description and identification of themes (Creswell and Clark, 2017). It is worth stating that strategies for the analysis method differ in regards to the fundamental epistemological paradigm regarding the state of the qualitative approach and the legitimacy of the researchers' consideration (Lewis, Ritchie, Ormston, & Morrell, 2003). Lewis et al. (2003) argued that it also alternates across styles in terms of the primary emphasis and the goals of the analytical process.

The data gathered from the interview sessions conducted was analysed by adopting a thematic method. Braun and Clarke (2006) defined thematic analysis as a method for identifying, analysing, and reporting patterns in the data. Since this qualitative phase of the study aimed to gain a better knowledge of the problems within the examination, thematic analysis was selected as an analytical technique. The coding process had been done manually and comprised of many stages such as initial coding, focused coding, looking for themes, and evaluating and identifying the themes adopted and altered from the literature by Braun and Clarke (2014).

3. FINDINGS AND DISCUSSION

The data collected through interviews and analysed using thematic analysis indicated that students acquire technical vocabulary in three ways, namely through learning during lectures, learning using technology, and through collaboration.

When it came to learning through lectures, most participants responded by indicating that they learned English technical vocabulary during the course. Specifically, they indicated that technical vocabulary was covered in the syllabus, especially during the introductory class modules. Some participants also indicated that technical terms were taught and explained in all subjects they covered under the course. For instance, when responding to how they learned technical vocabulary, participant 1 indicated that he was taught under the European Union Safety Agency (EASA) modules. Likewise, participant 12 responded that she learned during her basic aerodynamic class. A document analysis of the student's assignment confirmed this to be the case.

 The analysis also indicated that students acquire technical vocabulary through the use of technology. Technology was used in the class by the lecturer as well as by the students in and out of the class. For instance, participant 1 indicated that the lecturer used technology to enhance technical vocabulary learning during class. Specifically, the interviewer indicated that the lecturer provided pictures and videos of aircraft parts, especially during the day the lecturer feels more generous. Most, if not all participants, generally indicated that they relied on library computers, YouTube, Google, E-books, and social media platforms to supplement their efforts of acquiring technical vocabulary. For instance, participant 3 indicated that even when a term is not taught in class, he still can go to Google and search for the meaning of certain technical terms. Even when required to rely on books, the interview indicated that he retrieved appropriate books through online means. Student 6, 8 and most of the other participants highlighted the important role YouTube and Google plays in facilitating their technical vocabulary acquisition.

4. CONCLUSION

The study established that online learning can be used to enhance the acquisition of technical English vocabulary among aircraft maintenance students, for whom English is their second language. Aircraft maintenance instructors can use the findings of these studies to aid further research, facilitate practice, exercises, and referencing, facilitates group learning, and distance learning. It is suggested that Aviation English vocabulary need to be constantly revised and updated in accordance with the current changes in aviation industry's rules and regulations. Thus, aircraft maintenance instructors are expected to act as researchers, syllabus designers and, materials developers. Besides that, Aircraft maintenance instructors are also the evaluator of courses, materials and student learning. These instructors should keep in mind the fact that aircraft maintenance learners are required to master not only the technical vocabulary related to aircraft maintenance, but also the students are required to have expertise in flight related issues and the content pertaining to their prospective work place environments. Hence, taking this fact into consideration, instructors are expected to monitor their students' learning process and help them to overcome the difficulties they may encounter in this process.

The research highlighted key issues that could be used as the foundation for future studies. Future studies can investigate the same topic to investigate this study. However, as opposed to using qualitative research, researchers should specifically apply quantitative data. This study engaged in the exploration of a relatively underdeveloped studied research issue. Future studies should go further and conduct a descriptive study of issues. It should be built on theory, particularly the conceptual framework highlighted under the study. The aim of these studies should be to statistically test the theories outline in this research. Researchers should use probability-based sampling methods to come up with findings that can be applied to a wider population. In addition, future studies should focus on quantitative analysis to confirm or disregard its validity. From a pedagogical perspective, the study has outline ways that Aviation educators should use online learning to technical vocabulary acquisition among ESL. Most importantly is to treat online learning as a supplement rather than a substitute for traditional learning.

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