

Exploring the Potential of My Speaking App as a Non-Face-To-Face (NF2F) Language Learning Tool in 4.0 Education

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The trend in language teaching and learning has steadily moved from computer-based to mobile-based as expected by Education 4.0 and 4th Industrial Revolution. Hence, language learning materials in the form of mobile apps are highly demanded. Teachers have to work with designers to develop mobile learning apps that meet specific demands for a specific purpose and specific group of learners because "one mobile app cannot fit all." Therefore, the purpose of this article is to present the results of a research that was developed with 163 engineering students in the use of the mobile application 'My Speaking App' (MSA) as non-face-to-face (NF2F) in language learning in Education 4.0. Students were found lacking in using correct language expressions and having difficulty to meet each other to practice the language in a group discussion. A language learning module is innovatively designed and developed through the use of the mobile application to overcome the problem. The app provides a potential usage that allows language users to personalize learning and tailored based on Asian culture and themes. Users can experience themselves authentically when they listen to the pre-recorded conversations and recorded versions of their voice through Google speech-text in a flexible way. The app has been introduced to these students as NF2F learning at their time without attending an oral class. The most significant findings of the research indicate that the app has positive potential as NF2F language learning when it fulfill most of the elements in Education 4.0 where they can use it online or offline through quantitative data survey with the range of 4.0-5.0 mean scores. The users were also found to be more confident in using the second language in a face-to-face (F2F) environment.

Keywords: Non face-to-face (NF2F); face-to-face (F2F); My Speaking App (MSA); My Group Discussion (MGD)

I. INTRODUCTION

The current educational practices of learning speaking skills in Malaysia and another country are mostly conducted in a face-to-face (F2F) environment, which involves both listener and speaker at the same time, in a formal class and location, facilitated by the lecturer. However, the techniques of teaching and learning of speaking skills can also be implemented in a non-face-to-face (NF2F) environment especially in the era, leading to the Industrial Revolution 4.0 that affects and transforms human lifestyle, which is surrounded by latest, sophisticated digital devices. Time and

space constraints for the F2F classes to take place may limit the frequency of oral practices among learners (Fazilawati & Supyan, 2017). Consequently, feedback from teachers to students on their speaking skills may not be adequate and not effective. Due to this problem, it is a challenge for the researchers to respond to 4.0 Education need. This is because of the trend of teaching and learning has shifted from computer-based learning to mobile-based learning. The need to employ the most recent learning and teaching methodologies, resources, and materials with students, educators need to engage in innovation, to change the game in the language learning process (Peter, 2017), and to meet

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the students in their connected, collaborative world that may make their learning process more meaningful and relevant (Jackson, 2015; Kulkuska *et al.*, 2015). Besides that, designing and developing a language learning module or package is quite complex when researchers need to consider a few factors such as to cope with the complexity with the outside world, (Wallner & Wagner, 2016) to ensure the mobile apps designed ease the user. Next, the learning package provides a frame of reference for students to integrate their knowledge for their future life. Moreover, the information provided in the language learning package should be transformed for individual knowledge and the ability to compete with an abundance of information online. The other challenge that researchers faced in creating a social setting is to ensure sustainable learning whereby social interaction will take place. Finally, the most important factor is designing an individual assessment module so the learners can reflect their learning progress and contribute to the collective learning process from the scaffold sessions.

The purpose of the study is to explore the potential of the mobile application "My Speaking App" (MSA) as NF2F language learning in education 4.0. A transformation from the F2F speaking approach into a virtual NF2F scenario was presented in the form of mobile learning. Mobile application MSA is designed and developed as a tool for learning the English-speaking skills, due to meet the present netizens' life and learning styles. This language app is, and thus, should be added into this education 4.0 as the Industrial Revolution 4.0 era requires more digital learning packages. The Netizens need this kind of current language app because it is created for personalized learning and offer a NF2F communication focusing on the use of language expression in daily conversation or discussion, which is different from the other language app which focusing more on pronunciation and grammar. The app is also may help those who will be sitting for an oral test such as Malaysian University English Test (MUET), International English Language Testing System (IELTS) and others especially for private candidates who do not have any experience or speaking skills training. Essentially, the app provides a language expression training module and interactive virtual feedback on the user speaking performance scaffolded by the language facilitator through the social media platform in this mobile or M-learning. M-

learning is likely to open up far greater automated possibilities in the future as the analysis of natural speech becomes more feasible, allowing targeted feedback not only on pronunciation but on many other elements of communication in a real-world context (Pegrum, 2014). This study was carried out to meet the following objectives: (1) to explore the potential of MSA as NF2F language learning in Education 4.0. and (2) to examine the student acceptance and feedback on the usage of MSA as NF2F language learning in Education 4.0.

A. The benefit of M-Learning in Education 4.0

The use of the mobile application which offers complete learning packages could contribute lots of benefit for lifelong learning, especially in language learning in education 4.0. The methods used for 4.0 education are related to digital learning, which enhances student learning experienced (Daud *et al.*, 2016). The use of a mobile phone makes the learning session easier as everybody owns it. This technology-supports teaching and learning processes that are the key components for Education 4.0, which provides self-learning opportunities at student's own pace (Hariharasudan & Kot, 2018).

The learners will have their own learning experience just by installing the MSA on their smartphone. The process of learning is no more limited in the tutorial classroom. They can learn at any time and pace offline to absorb different information. This mobile-learning mode that offers an informal education scenario is more effective than the formal and medium and the short duration of interaction practiced in it is superior compared to long term interaction (Sung, 2016). Furthermore, the overload of information can be resized into a compact size through the smartphone, and they will be trained to use the technology and taught to be more competent. Smolog & Kot (2015) argued that this M-learning mode has upgraded the interdependence of the teaching and learning process. The learners can practice their speaking skills without facing another language speaker as it can be done NF2F meeting.

Language users would have a new experience with this interactive app that engages students by setting communication skills assessments that allow them to customize and record their voice in the MSA app. MSA was created to meet the Education 4.0 Mandate proposed by Idris Jusoh, the previous Minister of Higher Education

which is heutagogy (self-determined learning) and cybergogy (virtual-based learning), Mandate (2018). Mashadi & Kagozai (2011) with this M-learning approach, increase interaction between teacher and learner worldwide and creates flexible hours for knowledge acquisition. Language learners will be able to acquire the speaking skill to some extent by using their smartphone and will be scaffolded or guided by the facilitator to develop their skills for the next 4iR through the virtual platform without disturbing their student-learning time (SLT) from 8.00 a.m. till 5.00 pm. The mobile technology is now providing quick access and self-learning mode when using mobile learning apps (Lin & Fan, 2016).

II. METHODOLOGY

The study was conducted to find solutions to the problems that arise in improving the language learner speaking performance, especially for MUET or IELTS MSA was developed to meet the objectives. This study involved 163 participants, who are randomly selected from 346 engineering students at a matriculation college, and who have had experienced using MSA for six months before they sit for the MUET test. The sample experienced their speaking practices by using MSA and were guided by the teacher through WhatsApp and Telegram without attending an oral class. A pre-test and a post-test were conducted before and after they used the app as a comparison of their speaking performance in using the app. The test took two minutes speaking presentation focusing on the usage of language expressions. Then, they were encouraged to use MSA for their self-learning, but at the same time, they would be guided by the facilitator based on the exercises given in the app for further practices after they sent their video or audio recording to be commented on. The research phase involved in this teaching design system is based on the ISD and ADDIE Model (Branch, 2009), among others: requirement analysis (Phase 1), design and development (Phase 2) and evaluation (Phase 3). The respondents answered a survey questionnaire to evaluate the app at the end of the intervention period. The approaches used in this study are a combination of qualitative and quantitative. A survey on needs analysis and the usability of the applications were conducted for quantitative analysis, involving lecturers, students, and experts. The Fuzzy Delphi method was used to collect 15 experts' consensus on the MSA from ICT, mobile and language expertise. Additionally, a qualitative approach was also employed to provide in-depth

results to determine the design and activities, usage and benefit of MSA and My group discussion (MGD) via the social media platform. The data were collected through the focus of a descriptive case study on interviews, observations and document analysis.

A. MSA - Mobile Application

Language learning would be more interesting when technology can enhance the process of learning. Hu Zhang and Hung (2016) stated that the attention of span time can be reduced through flipped classrooms used as M-learning can motivate the learner. It is necessary to design and develop mobile learning applications for NF2F English language skills to enhance students' communication skills. Therefore, MSA is designed for the use of social expression usage and speaking practices. It is suitable for personal learning whereby language users can use it flexibly. The objectives of the app are to provide a new medium of NF2F environment in learning or acquiring the speaking skills. The learner can record their answer, or opinion, and listen to the recorded voice from the app without meeting their partner or friend to practice the speaking skills. MSA exposes them to real-life situations where polite or correct expressions are used for apologizing, asking for clarifications, interruption, giving descriptions, etc.

The other purpose is to provide the language learners adequate interactive practices in the app. The app consists of tips on speaking preparation, grading criteria, lessons, practices, enrichment exercises, bank, YouTube simulation of group discussion and MGD link. The level of practice follows the levels in Bloom's Taxonomy. It consists of 3 levels of assessment; 1. Express the correct expression of the language; 2. Listen to the statement and state the right expression, and 3. Listen to interactive audio simulation as an example to the user with 5 situations (questions). Users are free to choose the situation and the type of candidate they want to be. The scoring marks depend on the use of the spoken expression and the amount of recording time. Users can contact the facilitator via the provided link either by email address or via WhatsApp /Telegram platforms. Figure 1 below shows the 'Use case diagram', which portrayed the interaction of the system and the user or whoever uses the application and ways to use it. The MSA application allows

students to learn in personal and free learning; they can begin at any time or at their own pace. Users of the app are free to explore any parts of the app without follow-up (Nawi, 2014).

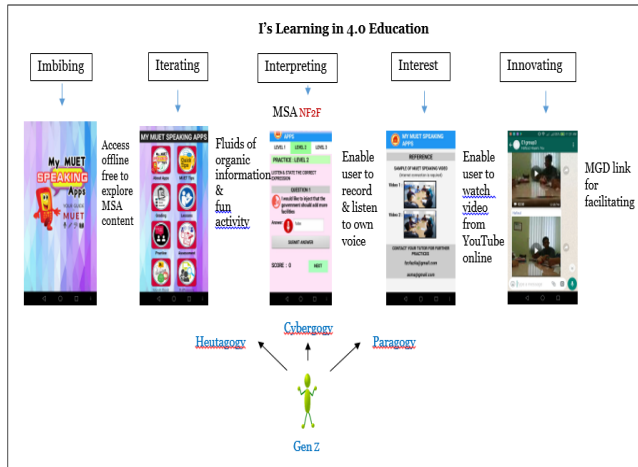


Figure 1. The Adaptation of I's learning framework in the use of MSA as NF2F medium in Education 4.0

A. The integration of 5 I's in MSA as the NF2F language learning in 4.0 Education

The 5 I's of learning in 4.0 Education, suggested by (Parag, 2017) such as imbibe, iterate, interpret, interest and innovate suits the MSA approach in all presented stages. The first I is imbibing: internalizing the basic concept of learning. Various use of smartphones or tablets infuses excitement amongst Gen Z. The use of visual and audio in MSA enables the user for NF2F communication. Secondly, it is iterating; practicing fundamental skills rigorously through fun activity competition and challenging tasks. MSA provides the level of difficulties of problem-solving tasks in its exercises. The user performance will be evaluated through the use of correct language expression. Thirdly, it is interpreting; applying facts to a different situation with an adaptive alteration. The use of the mobile application as NF2F practices for speaking skills, diversity of F2F communication, without the presence of both communicators. Fourthly, it is interesting; MSA develops curiosity amongst Gen Z as they can use their smartphone for language learning. This is a new way of practicing speaking skills in the NF2F environment and cybergogy. Students will have personalized training before they face the real situation of F2F communication. Consequently, this strategy reduces their speaking apprehensive. Finally, innovative ideas in the

design and development of MSA based on local cultural ingredients and tastes are embedded in the design. As an educator, when approaching 4.0 Education, we need to think differently and go cross-disciplines and innovate ideas, products, and services to enhance the learning process. The design and development of the MSA and the MGD link provided in the reference screen show the innovative way of enhancing the speaking skills in language learning. Thus, this promotes the Gen Z's learning characteristics of 4.0 Education: heutagogy, cybergogy, and paragogy language learners.

III. RESULTS AND DISCUSSION

The following results answered the research questions in this study to indicate the transformation of F2F to NF2F communication in practicing the speaking skills in 4.0 Education. Data were collected among 15 expertise including language and mobile learning fields of works through a quantitative survey.

Figure 2 highlights the significant findings of the potentiality of a mobile application as NF2F in language learning in Education 4.0, which answered the first research question in this study. What is the potentiality of MSA as NF2F language learning in Education 4.0? The experts' consensus was analysed based on few constructs which have been tested before it has been used. The reliability of MSA constructs achieved the highest alpha coefficient values such as MSA design and development (0.92), teaching approach (0.82), learning strategy (0.84) and MSA usability (0.918). Coefficient value >0.80 – 1.00 is the highest value (Hair et al., 2010). Next, the MSA design, contents and implementation related to the suggested elements in Education 4.0. Results from the study show that the app design, objective, approach, contents, strategy, usability, and impact achieved the highest mean scores, which are more than 3.5 for all Education 4.0 elements. The MSA potentiality can be seen through the Education 4.0 elements for NF2F learning. The highest mean scores of 5.0 in Education 4.0 elements are; 1). Heutagogy: when the user can use it by their determination, they can explore all the MSA contents at anytime and anywhere they liked 2). Diverse learning: when the user able to have their practices and trained themselves to master the MSA content. 3). Creative: the app is designed by imparting the sources such as Google speech-text, to enable the user to transfer their speech to text or vice versa. 4). Communication: the most important element in the speaking app is to provide users

with the authentic experience; where they can listen to the recorded audio and record their voice in the app.

While the elements that achieved the second-highest of 4.60 mean scores are: 1). Analytical, which can be seen through the users' achievement depends on the correct usage of the language expressions in the MSA. 2). Evaluation, self-corrected; users were able to evaluate their performance based on the score marks. 3). Informative, when MSA provides with fluid and organic information in its content and with the example of media clips through YouTube link. 4). Cybergogy, whereby MSA provides an experience of virtual-based learning online or offline. 5). Problem-solving, when the task provided in MSA requires the user in giving their opinion in solving the problem. 6). Paragogy, where the usage of MSA is supported by the social platform (WhatsApp or Telegram) when users able to collaborate with peers and instructors for further practices.

Thus, from the above findings, it is clear that M-learning has a great potentiality as a medium and the tool of teaching and learning in the era of Industrial Revolution 4.0, when most of the elements fall within the range of 4.0 – 5.0 mean scores. Therefore, the survey questions yield reliable results, and the experts' and students' responses appear to reflect their acceptance of MSA as the NF2F medium for language learning. The MSA is suitable to be used outside the classroom at any time and place which prescribed the 21st Century style of language learning. Practicing speaking skills through MSA could be a new way of learning the skill (Kulkuska & Demouy, 2010) as it moves from face-to-face (F2F) to NF2F communication.

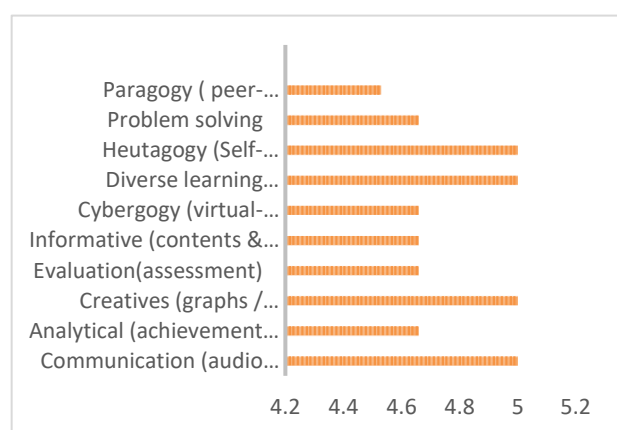


Figure 2. The Potential of Mobile Application in Language Learning in Education 4.0

The results presented in Table 1 provide an answer to the second objective in this study on the student acceptance and

feedback on the use of MSA as NF2F learning tool for speaking practice.

Table 1: Descriptive analysis of post-survey responses—user acceptance & feedback on the use of MSA as NF2F learning in Education4.0. (on a scale of 1 to 4)

No	Item	n	Mean	SD
1	I like the design of accessibility in the MSA.	154	3.68	0.572
2	I like the visual design in the MSA.	154	3.58	0.654
3	I like the design of information presented in the MSA.	154	3.74	0.635
4	I like the interactivity design (audio and sound recording) found in the MSA.	136	3.34	0.839
5	I feel more comfortable to use MSA compared to a reference book.	163	3.82	0.382
6	MSA increased my self-confidence in using English in the group discussion.	136	3.41	0.804
7	MSA helps me to use the correct language expressions.	136	3.12	0.733
8	I always use MSA & MGD as NF2F oral skills training.	146	3.57	0.775
9	I use the MSA application anywhere according to my own preferences.	163	3.81	0.392
10	I use the MSA app at any time according to my own preferences.	163	3.77	0.419

All 163 students' responses were positive that the MSA app can be used at any time (mean 3.77, SD 0.419) of their choice and at anywhere (mean 3.81, SD 0.392) according to their preference. Next, 146 students responded positively (mean 3.57, SD 0.775) that they always use the MSA and MGD as NF2F aural skills training. Meanwhile, 136 students responded positively (mean 3.12, SD 0.733), that MSA helped them in using the correct language expressions and increased their self- confidence in using the English language in the group discussion (mean 3.14, SD 0.804). All 163 students agreed that they are more comfortable to use MSA compared to a reference book (mean 3.82, SD 0.382). While 136 students responded positively that they like the interactivity design (audio and sound recording) found in the MSA (mean 3.34, SD 0.839). 154 students responded positively (mean 3.74, SD 0.635) that they like the design of information presentation and the visual design in the MSA. Last but not least, 154 students responded positively (mean 3.68, SD 0.572) that they like the design of accessibility in the MSA.

Overall, students responded positively to the use of MSA as NF2F in language learning in improving their English proficiency when the descriptive statistical analysis of mean scores for 6 out of 10 items is high, which is more than 3.5. Still, the standard deviation for 10 items, not exceed 1.00 with a small sample. This finding is closely related to findings found in Lin and Fan's study (2016) in the usage of mobile apps for the Mandarin language.

A similar application Mondly, a language app available in Google Play, may be useful or become the best app for language learners in learning the speaking skill, but it might not be appropriate or suitable for those who will sit for MUET speaking test. Thus, this MSA is created to fulfil their needs not only for examination purposes but also to enhance their speaking skills, as MSA highlights the use of language expression in daily conversation and discussion. Although it is quite subjective to evaluate a comprehensive students' oral presentation using technology, it can be carried out with the MGD discussion group platform linked with this MSA application. Teachers and learners are responsible to shape the language learning process and the presence of a teacher to guide learners in the activities is still very important (Kukulka *et al.*, 2015). Thus, educators act as a facilitator to support the MSA users who feel that they still need some mediation to complement and support their language learning.

Besides that, MSA fulfils the requirement of 4.0 Education as aforementioned in the above section, as it applies the artificial control in its system to evaluate the language expression usage recorded by the user. Findings from the qualitative interview also indicate that users want more exercises in the app. The records showed that they liked and did all the exercises provided in the app. For example, *the app is good...I like the exercises... but I think the developer should provide more exercises in it.* The developer will update the content of MSA, according to the needs and changes in the MUET syllabus, which is also aligned with the CEFR requirement. Hence, MSA offers ubiquitous learning; this will also allow the language learner to be an independent learner and reach to lifelong learning through their effort. The target of Education 4.0 is to prepare graduates who are capable of digital resources and also competence in their communication.

IV. CONCLUSION

In conclusion, the research findings revealed that MSA has great potential as NF2F language learning in Education 4.0. Practicing the speaking skill through the phone, complementing the human being with the integration of artificial intelligence, a cybergogy environment could be the driver for Education 4.0. Education 4.0 offers a virtual class without the presence of lecturer, MSA offers offline usage, whereby they can use it without the internet connectivity and replace books as it fluids with information. Smartphones with its unique features with a small size, the capacity of recording audio and video, etc. become the most popular tool for learning in leading to the era of the 4.0 Revolution. Hence, MSA is developed in a simplified way, but innovative and informative with guidance, practices which support an interactive self-learning environment. It can be concluded that MSA could be the driver for 4.0 Education in language learning as it caters to the needs of 4.0 Education.

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