Designing Interactive Academia-Industry Framework in Digital Language Classroom

Wan Najmiyyah Wan Md Adnan[1*], Najlaa' Nasuha Mohd Radin[2], Aileen Farida Mohd Adam[3] and Nooryuhanis Hashim[4]

[1][2][4]Academy of Language Studies, Universiti Teknologi MARA, Cawangan Terengganu, Kampus Dungun, 23000 Dungun, Terengganu
wannajmiyyah@uitm.edu.my
najlaanasuha@uitm.edu.my
nooryuhanishashim@uitm.edu.my
[3]Academy of Language Studies, Universiti Teknologi MARA, Cawangan Pulau Pinang, Kampus Permatang Pauh, 13500 Permatang Pauh, Pulau Pinang
aileen@uitm.edu.my
*Corresponding Author

Abstract: Language pedagogy has recently shifted its focus to digital pedagogy, hence classroom tasks being modified has become an essential practice around the world. One challenging element of teaching in a digital classroom is keeping students interested and ensuring that they have genuine learning experiences. It was also discovered that digital language classrooms give students minimal exposure to real-world settings, especially in English for Professional Interaction digital classrooms as it lacks the tools that connect academics and industry players. This study's main objective is to conceptualise a framework that uses an educational research and development model that includes industry players as part of the classroom tasks and lesson plans for students' engagement in the digital language classroom. The study's research design is a 10-stage research and development methodology that includes both quantitative and qualitative data analysis. The study was conducted over the course of four semesters from June 2020 until January 2022 in English for Professional Interaction classrooms. Professional speakers from various industries were invited for online class discussions and feedback was collected after each session. This interactive academia-industry framework in the digital language classroom serves as a methodological design that has the potential to affect students through authentic usage of content for realistic learning experiences.

Keywords: Academia-Industry Linkage, Digital Classroom, Educational Research, Language Learning, Professional Interactions.

1.   Introduction

It has long been established that universities must equip their graduates with the necessary soft skills to increase their graduates' employability, and one of the most in-demand skills required by industry stakeholders is the ability for graduates to communicate effectively. Malaysian universities have long been chastised for producing graduates who are weak in English (Agus, 2011; Dzulkifly, 2018; Muhammad et al., 2021), and for not preparing graduates for specific needs of the industries

(Isnin et al., 2018). Thus, these visible gaps need to be bridged between academia and industry. The situation has recently worsened when traditional classroom settings are gradually being replaced by digital classroom settings. While rapid technological advancement has enabled educators to improve their technological skills, it has also been discovered that technology has further disengaged students from the real world, as learning environments are inherently dependent on the interpersonal relationship between educators and their students (Lawrence et al., 2019; Fazlinda et al., 2020). However, there were also studies which indicated that digital tools in the classroom can bring positive changes to students' engagement (Ebner and Gegenfurtner, 2019; Gupta & Sengupta, 2021; Leslie, 2019; Rajeswari et al., 2021). Thus, when it comes to the digital classroom, educators must understand how to strike a balance between the changing learning environment and maintaining student engagement.

Looking at the issue from a positive point of view, the changes from traditional classroom to digital platform has provided educators with more possibilities to engage industry stakeholders into the classrooms and share their perspectives and knowledge with students. It is pivotal that students receive feedback on the needs and requirements that their future employers will expect, so that they can reflect on and re-evaluate their abilities (Ikramudin, 2018; M. Awais Hassan et al., 2019). Therefore, it is obvious that there is a need to have an interactive academia-industry framework for digital language classrooms as it can work as a platform to allow students to directly connect with the industry stakeholders.

2.   Literature Review

Several reviews have been conducted to synthesise and summarise the trends of this study. The review of literature iterates that learning theories, learning environment and pedagogical knowledge (of the educators) were crucial in moulding the learning experiences of the students, and especially in the academia-industry classroom learning context. Becoming conversant with different learning theories helps to create an appropriate learning environment and optimise learning. This is because it will provide multiple approaches for the educator to form a philosophical basis for curriculum design and evaluation of learning activities (Torre et al., 2006). Three general learning theories, namely Behaviourism, Cognitivism and Constructivism are among the earliest developed. Dewey (1966) suggested that effective learning takes place when students use prior and prevailing experience in creating a new one. Alomyan and Green (2019) highlighted that regardless of each theory's limitations, the theories are critical elements to having effective learning in different environments - whether online or face-to-face. Thus, the ability to interact with the environment allows the students to adapt and learn which would offer more meaningful learning to happen.

Understanding the learning environment is also important in forming the best experience for the students. In this case, transitioning from a traditional to digital learning environment marks another milestone of learning beyond the classroom. While Fazlinda et al. (2020) found that learning English in traditional classroom is preferable because it offers better communication with the instructors and ability to understand the lesson, previous research have established that the use of digital tools perceived a higher positive attitude and more effective among students (Ebner & Gegenfurtner, 2019; Gupta & Sengupta, 2021; Rajeswari et al., 2021). This shows that practicality is indeed required by the students to progress, and individualised touch is vital in developing a student's motivation.

The change of pedagogy challenges the present teacher's pedagogical knowledge where the abrupt shift to online learning questions the teacher's technological knowledge. Teacher's pedagogical knowledge is defined as the teaching knowledge that is relevant in conducting teaching-learning activities. This covers both theoretical or scientific knowledge and practice-based knowledge (Guerrierro, 2017). Malva et al., (2020) investigated a suitable instrument in measuring the pre-service teachers, in-service teachers, and teacher educators' general pedagogical knowledge, and the findings revealed that the respondents need to integrate theoretical knowledge and practical knowledge to generalise effective practices, especially in designing, implementing, and evaluating teaching and learning process.

When it comes to academia-industry relationship, students were found to still lack the real-world connection with what they are learning in class (Muhammad et al., 2022). It is also iterated that due to a lack of competent and suitable forums and platforms to facilitate each other, both sides of industry-academia have been unable to create a strong mutual relationship from the past to the present

(Ikramudin, 2018; Marquez-Ramos, 2021). A feedback loop is critical in this type of partnership in which the industry stakeholders provide information to academia on their perception and appraisal of their products, in this case, students (Ikramudin, 2018; Muhammad Awais et al, 2019). It was also found that timely and accurate feedback on students' performances, as well as creating an engaging learning environment, can ensure the success of e-learning platforms (M. Awais Hassan et al., 2019; Leslie, 2019). Hence, the main concerns are the fact that the syllabus for English classrooms is heavily based on online materials with little exposure to real-world situations; and that there is still disconnectedness between academia and industry stakeholders. Therefore, the main objective of the study is to develop an interactive academia-industry framework in the language classroom by integrating the research development model of Borg and Gall (1983).

3.   Research Methodology

Educational research and development method is usually used to create and validate educational materials, known as educational development research (Khotimah & Wahyu, 2019). Therefore, the research design for this study was developed and adapted based on the research and development model as proposed by Borg and Gall (1983).
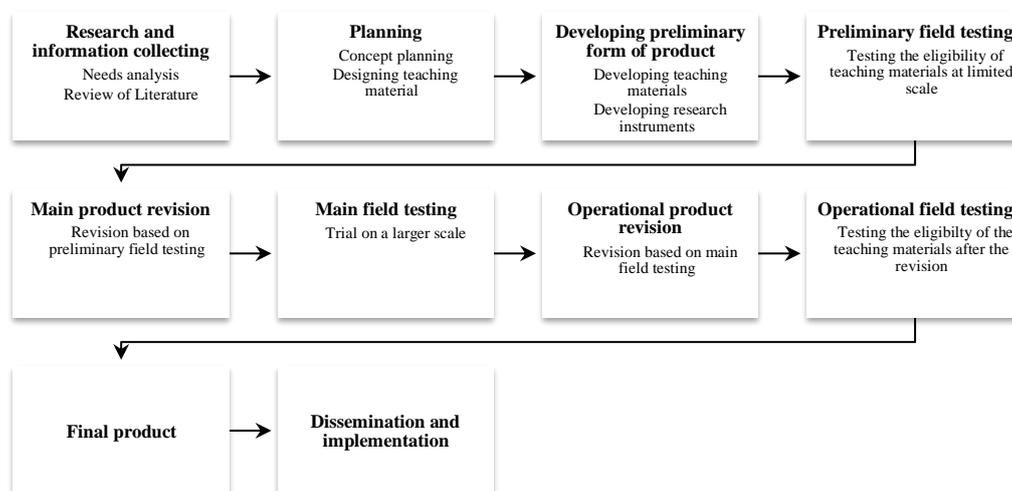

Fig. 1 Research and Development model (Borg and Gall, 1983)

Figure 1 shows the ten stages in the research and development model as proposed by Borg and Gall (1983). The stages include Research and information collecting, Planning, Developing preliminary form of product, Preliminary field testing, Main product revision, Main field testing, Operational product revision, Operational field testing, Final product, and Dissemination and implementation.

The samples for this study were degree students taking the course of English for Professional Interaction (ELC650) at Universiti Teknologi MARA Cawangan Terengganu, Kampus Dungun. The selection was made as the samples were readily available and the simplicity of sampling eased the process of data collection and methodology. The use of non-probability sampling is deemed suitable as this study collected in-depth information on the experiences of chosen samples and constructed a framework based on those experiences. Thus, the use of non-probability samplings would produce valuable information in answering the research questions (Merriam, 1988). English for Professional Interaction (ELC650) is a course aimed to provide students with the necessary interpersonal skills for their personal development as well as professional interaction skills in the workplace, where students are exposed to a variety of essential communication skills. The ELC650 syllabus covered was Consideration for Professional Interactions at Workplace and the sub-topics discussed were skills needed at the workplace, professional appearance, professional work ethics and cultural differences at the workplace. The research and development process took place from June 2020 until February 2022, over the course of four semesters. The average students' ages were between 21- 23 years old. The

classes also invited different professional speakers for a one-hour virtual coffee talk session during ELC650 class every semester. Table 1 indicates the participants for the study.

Table 1. Participants for the study

Semester	Participants	
	Speaker	*Students*
June 2020	Speaker 1 (Banking & Investment)	30
January 2021	Speaker 2 (Oil & Gas)	44
June 2021	Speaker 3 (Banking & Management)	30
January 2021	Speaker 4 (Human Resource & Managerial)	30

The data collected were in the form of qualitative and quantitative data, which include questionnaires for the students, and written and spoken feedback from the professional speakers. The data was analysed using descriptive data analysis and qualitative data analysis. For qualitative data analysis, naturalised transcription is used thus the study preserved any grammatical errors made by the respondents. Naturalised transcription is deemed necessary for the study as it entails a complete transcription of what is said and how it is spoken (Oliver et al., 2005). Hence, the responses would preserve the contextual meanings and perceptions of the respondents.

4. Results and Discussion

4.1 Research and information collecting

This first stage included identifying the needs of having virtual coffee talk sessions in ELC650 classrooms. The literature study was first conducted to gather research findings and other information related to the importance of interactive academia-industry virtual coffee talk in the ELC650 classroom. Background research for the study was formed at this stage. From the observation of the current syllabus and previous literature on the subject, it was found that there is a need to incorporate virtual coffee talk sessions with the professionals in the classroom. As previously stated, the way the courses were delivered provided positive online learning experience to the students (Muhammad et al., 2022; Rajeswari et al., 2021).

4.2 Planning the virtual coffee talk session

Researchers planned the first virtual coffee talk session in June 2020 after gathering all necessary information and data about existing issues. At this stage, the researchers prepared a guided lesson plan based on the ELC650 syllabus to ensure that the specific objectives of conducting the virtual coffee talk sessions were met. Briefings were also conducted for both the students and the professionals to ensure that the session would be suitable and appropriate for the students. Other factors like time frame, speaker's background and students' readiness were also considered in the planning stage.

4.3 Developing preliminary form of virtual coffee talk session

The preliminary form of virtual coffee talk session included the tentative programme, students' background, topics to cover and prepared questions. Announcement of the virtual coffee talk session was also made to the students with a basic introduction to the speakers' background to ensure the smoothness of the session. The students were also informed of the main purpose of the virtual coffee talk session as to give them a clear overview of the activity before the session with the industry stakeholders begins. Understanding the learning objectives and purpose of the lesson plan is an important part of developing the framework, as it provides a philosophical foundation for curriculum design and evaluation of learning activities (Torre et al., 2006).

4.4   Preliminary field testing

Another lecturer teaching ELC650 was engaged to confirm the reliability of the virtual coffee talk proposal. The preliminary field testing was carried out in the June 2020 semester, with a class of 30 students. The virtual coffee talk session invited a professional speaker from the Banking and Investment industry to represent industry stakeholders and it was conducted for 30 minutes via Google Meet. After the session ended, verbal and written evaluations were gathered from both the speaker and the students. Table 2 indicates the participants' overall responses of virtual coffee talk conducted during the preliminary field testing.

Table 2. Participants' overall responses of virtual coffee talk during preliminary field testing

Participants	Responses
Speaker 1	*I think it is a good initiative bridging academia and industry. This class specifically inviting speakers to cover certain topics and enabling students in the class to interact and ask questions, which is more personalised compared to general talks.*
Student 1	*I think half an hour is not enough. I want to ask her more.*
Student 2	*I take some notes but then I do not write anymore as I wanted to focus on her speech*
Student 3	*I feel like I'm talking to really really someone in her working place. I feel very excited and more confident and I want to be like her.*

The result showed that the participants in the preliminary field testing responded positively towards the organisation of virtual coffee talk session. Speaker 1 believed that the session allows the students to interact with those from the industry in a more focused manner. The students also exhibited that the virtual coffee talk session was interesting and they were exhilarated with the session.

4.5   Main product revision

After the preliminary field testing was conducted and feedbacks were gathered, revisions based on the preliminary field testing were made to the framework. Instead of 30 minutes, it was decided that the session would be extended to one hour. A survey form was then developed with the main intention to gather detailed feedback from the students in a structured manner, based on their experience attending the virtual coffee talk session. The survey was adapted from Marks & Eilks (2010) and two main sections included in the survey form were (i) knowledge and skills development, and (ii) overall opinion on the virtual coffee talk session.

4.6   Main field testing

Two virtual coffee talk sessions were carried out for main field testing with different groups of students in January 2021 and June 2021 respectively. The January 2021 session involved a speaker from the Oil and Gas industry and 44 students. For the June 2021 session, a speaker from the Banking and Management industry and 30 students were involved respectively. At the end of each session, the students were required to answer a survey via Google Form. Table 3 denotes the students' evaluation on the sessions which were carried out in terms of their knowledge and skills development.

Table 3. Participants' evaluation of virtual coffee talk (knowledge and skills development) during main field testing

Items	Strongly Disagree (%)	Disagree (%)	Undecided (%)	Agree (%)	Strongly Agree (%)
1. The lesson developed my ability to enhance my knowledge on Professional Interactions at Workplace	0	0	0	59.1	40.9
2. The lesson helped me improve my knowledge on Professional Interactions at Workplace	0	0	2.3	43.2	54.5
3. The lesson developed my abilities and skills for the subject	0	0	4.5	54.5	40.9
4. The lesson provided the opportunity to practice the skills required in the course	0	0	0	63.6	36.4
5. The lesson allowed me to synthesize fundamental knowledge and skills.	0	0	4.5	56.8	38.6
6. The course helped me make progress in my knowledge on Professional Interactions at Workplace	0	0	2.3	56.8	40.9
7. The lesson improved my problem-solving skills related Professional Interactions at Workplace	0	0	4.5	61.4	34.1
8. The lesson developed my skill on Professional Interactions at Workplace	0	0	2.3	45.4	52.2

The findings in Table 3 revealed that most of the students agreed that the virtual coffee talk sessions that they attended helped them with their knowledge and skills development related to the subject that they were currently taking. Majority of students indicated that they strongly agreed with item 2 "The lesson helped me improve my knowledge on Professional Interactions at Workplace" (54.4%), followed by item 8 "The lesson developed my skill on Professional Interactions at Workplace" (52.2%). The students also rated that they strongly agreed with item 1 "The lesson developed my ability to enhance my knowledge on Professional Interactions at Workplace', item 3 "The lesson developed my abilities and skills for the subject" and item 6 "The course helped me make progress in my knowledge on Professional Interactions at Workplace" with the same percentage (40.9%). This indicated that in terms of the students' knowledge and skills development, the virtual coffee talk sessions aided them well in their ELC650 subject.

Apart from that, the participants were also asked to share their overall opinion of the virtual coffee talk session. Table 4 depicts the participants' overall responses of the virtual coffee talk sessions carried out during the main field testing.

Table 4. Participants' overall responses of virtual coffee talk during main field testing

Participants	Responses
Speaker 2	*This is a good programme. It helps to expose students to the real workplace situation that are not taught in class. This kind of exposure can broaden the students' view of what is actually going in the workplace.*
Speaker 3	*The overall responses were ok, but the content should be more specific. The students need to be more participative. In terms of the talk, I think such session should be continued with different speakers for different point of views.*
Student 1	*The virtual coffee talk was very great as the presenter manage to give a message and exposure toward working environment that will be useful in the future.*
Student 2	*Overall, I think this session is really useful for the student to improve their professional skills and I feel really happy to have the opportunity to join the session.*
Student 3	*I received some new knowledge of course, even though the guest for the event was not in my industry but the tips by him was very useful for my future*

The qualitative result indicated that both speakers agreed that the virtual coffee talk sessions were beneficial towards the students and should be continued as it can equip the students with actual workplace situation knowledge even though the students needed to be active participants during the sessions. Similarly, the students agreed that the sessions provided them with a deeper understanding of professional skills needed in the workplace.

4.7 Operational product revision

Based on the previous virtual coffee talk sessions that were carried out, suggestions based on the feedback were received and necessary revisions were conducted to ensure better future sessions of virtual coffee talks. It was found that the content should be more specific in terms of knowledge and subject related skills development to allow better application from theory to practice. Another revision also included the emphasis of the awareness on the attitudes and experiences of the students in online classroom interaction. It was also found that it is fundamental for the students to be fully engaged during the session and more opportunities should be provided for them to practise their skills. Therefore, the product revision also included to appoint a student as the chairperson for the session, and to prolong the question-and-answer session.

4.8 Operational field testing

After the revision was completed, then main field testing was carried out in January 2022 by inviting a different professional speaker for the virtual coffee talk session. At this stage, 30 students were involved in the session. Improvements were made based on the suggestions gathered from the previous virtual coffee talk sessions. At the end of the session, a survey was distributed to the students to gauge their opinions on the activity. Table 5 shows the participants' evaluation of the virtual coffee talk session carried out during the operational field testing.

Table 5. Participants' evaluation of virtual coffee talk (knowledge and skills development) during operational field testing

Items	Strongly Disagree (%)	Disagree (%)	Undecided (%)	Agree (%)	Strongly Agree (%)
1. The lesson developed my ability to enhance my knowledge on Professional Interactions at Workplace	0	0	3.3	36.7	60
2. The lesson helped me improve my knowledge on Professional Interactions at Workplace	0	0	3.3	30	66.7
3. The lesson developed my abilities and skills for the subject	0	0	3.3	36.7	60
4. The lesson provided the opportunity to practice the skills required in the course	0	0	3.3	36.7	60
5. The lesson allowed me to synthesize fundamental knowledge and skills.	0	0	3.3	36.7	60
6. The course helped me make progress in my knowledge on Professional Interactions at Workplace	0	0	3.3	33.3	63.3
7. The lesson improved my problem-solving skills related Professional Interactions at Workplace	0	0	3.3	36.7	60
8. The lesson developed my skill on Professional Interactions at Workplace	0	0	6.7	23.4	70

The findings from the table revealed that most of the students agreed that the virtual coffee talk session that they attended benefited them in terms of their knowledge and skills development for their ELC650 subject. Majority of students indicated that they strongly agreed with item 8 "The lesson developed my skill on Professional Interactions at Workplace" (70 %). followed by item 2 "The lesson helped me improve my knowledge on Professional Interactions at Workplace" (66.7%), The students also rated that they strongly agreed with item 6 "The course helped me make progress in my knowledge on Professional Interactions at Workplace "(63.3%). This manifested that the virtual coffee talk session positively impacted the students' knowledge and skills development for their ELC650 subject.

Like the main field testing stage, the participants were also asked to express their overall opinion of the virtual coffee talk session. Table 6 illustrates the participants' overall responses of the virtual coffee talk sessions carried out in the operational field testing.

Table 6. Participants' overall responses of virtual coffee talk during operational field testing

Participants	Responses
Speaker 4	*This is a good session. However, instead of covering various topics, maybe the focus should be more on the tips and skills expected by future employers. I think that would be more suitable.*
Student 1	*I feel very happy to be in this session for today and I hope there will be more session like this in future especially for the fresh graduates.*
Student 2	*It really gives me a lot of benefit in terms of adapting in working life experience.*
Student 3	*Overall, it does answers a lot of my questions regarding to workplace situation, what to expect as a fresh graduate works.*

The findings showed that the speaker felt that the virtual coffee talk session was good towards the students, but the topic should be revised to suit the expectation of the students' future employers. The students felt that the session was useful, especially in exposing them to the workplace environment and working experience.

4.9   Final product

After operational field testing was conducted for the virtual coffee talk session, improvements were made to the virtual coffee talk lesson plan based on all testing results, and it was found that the final product of virtual coffee talk should include Skills Development and Content Development to get the desired output. Skills development refers to the students' speaking and listening skills, critical thinking, and problem-solving skills, and to emphasise on whether the students would progress well in the subject. Meanwhile, Content Development refers to educators' fundamental knowledge on the subject so the theories learned during the subject can be applied to practice. Hence, future speakers of virtual coffee talk sessions should be chosen from different backgrounds to suit the needs of the students from various courses. Based on the feedback from the speakers and the students, the topics for the virtual coffee talk should focus on skills required by the students for workplace communication and tips for fresh graduates to be in the industry. At this stage, the improvement of the final product was done so that the developed academia-industry framework would be more accurate. Then, a guided interactive framework for virtual coffee talks session was finalised.

4.10   Dissemination and implementation

Based on the research development model and reviews of literature done on the topic, the study then developed and finalised the interactive academia-industry framework. Figure 2 presents the interactive academia-industry framework for digital language classroom.
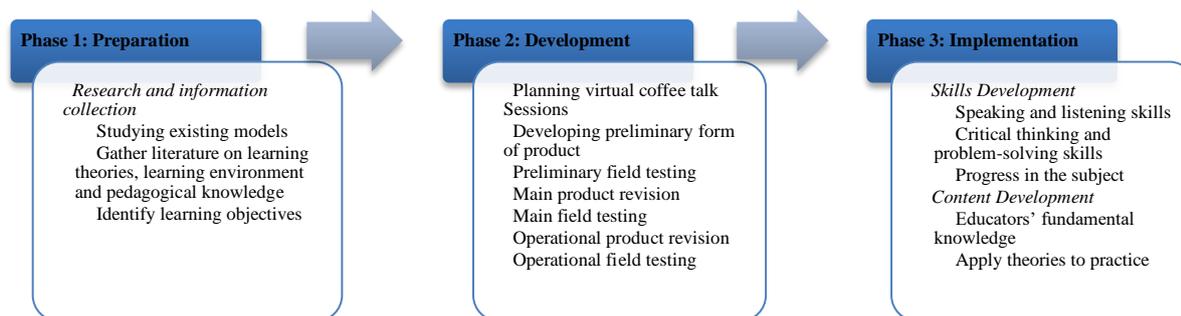

Fig. 2 Interactive academia-industry framework for digital language classroom

This framework sets out to engage academia with industry through virtual coffee talk sessions. The framework was first developed by focusing on the literature that helps to shape understanding of why language classrooms need to engage more with the industry stakeholders, especially in the Language for Professional Communication classroom. The literature looked into the learning theories, learning development and pedagogical knowledge needed to shape the learning objectives. As previously mentioned, understanding learning theories helps to form the basis for curriculum design (Torre et. al, 2006) while engaging oneself in a suitable learning environment especially online, have proven to be effective in getting positive results from the students (Ebner & Gegenfurtner, 2019; Gupta & Sengupta, 2021; Rajeswari et al, 2021). It also indicated the importance of comprehending pedagogical knowledge, especially the bridge between theory and practice (Guerrierro, 2017; Malva et al, 2020). This then shaped the learning objectives of the virtual coffee talk session – which is to promote students' engagement, to provide students with real learning experiences, and to engage the language classroom with collaborative learning with the industry. Then, the virtual coffee talk sessions were conducted. The output of a virtual coffee talk session can be divided into two namely Skills Development and Content Development. In summary, these two major progresses expected from the virtual coffee talk session would engage students not only in terms of learning experiences, but also in widening their understanding on career and workplace environment, providing meaningful conversation, and getting real insights from real working environment. All in all, the framework is able

to convey how classroom engagement might be conceptualised with help from the industry, and that it can be adopted and adapted to suit the needs of other types of interactive classroom activities.

5.   Conclusion

This study discussed a methodological design in developing an interactive academia-industry framework for digital language classrooms. This framework also serves as a classroom innovation that has the potential to affect students through authentic usage of content for realistic learning experiences. It was found that virtual coffee talk sessions conducted in small classrooms showed positive results in all stages of research and development as enlisted by Borg and Gall (1983). The developed virtual coffee talk sessions were also proven to be able to motivate students and encourage positive learning experience among students. Not only do such activities provide support in the knowledge and skills development, but it is also helpful in providing quality content for the teaching and learning processes.

6.   Suggestion for Future Research

One of the practical contributions of this study is that it lays out a practical and strategic framework that contributes to various dimensions of engagements in teaching and learning especially in digital language classrooms, as well as significant proof for positive collaboration with industry stakeholders. The methodological framework also provides a flexible framework for English educators and students, universities, and industry stakeholders to further explore ways in which academia and industry can collaborate. Hence, for future research, the researchers suggest that more studies could be done on the risks and challenges in engaging academia with industry, as it could help to evolve the framework to include different teaching and learning materials suitable to the needs of future graduates.

7.   Co-Author Contribution

The authors affirmed that there is no conflict of interest in this article. Author1 wrote the research methodology, carried out the fieldwork, helped with the interpretation of the results and overlooked the writeup of the whole article. Author2 carried out the fieldwork and did the data entry and the statistical analysis. Author3 and Author4 prepared the literature review and helped with the interpretation of the results.

8.   References

Agus, A., Awang, A. H., Yussof, I., & Makhbul, I. Y. M. (2011). The gap analysis of graduate employees' work skills in Malaysia. *Proceedings of Business and Information*, *8*, 1-15.

Alomyan, H., & Green, D. (2019). Learning theories: Implications for online learning design. *ICSET 2019: Proceedings of the 2019 3rd International Conference on E-Society, E-Education and E-Technology,* 126-130. https://doi.10.1145/3355966.3358412.

Anealka A.H. (2018). Education 4.0 made simple: Ideas for teaching. *International Journal of Education & Literacy Studies, 6* (3), 92 – 98, https://dx.doi.org/10.7575/aiac.ijels.v.6n.3p.92

Borg, W.R., & Gall, D. (1983) *Educational research*. Longman.

Dewey, J. (1966). *Democracy and education: An introduction to the philosophy of education*. The Free Press.

Dzulkifly, D. (2018, November 8). Employers blame poor communication, language skills for unemployed Bumi grads. *Malay Mail*. https://www.malaymail.com/news/ malaysia/2018/11/08/employers-blame- poor-communication-language-skills-for-unemployed-bumi-grad/1691146

Ebner, C., & Gegenfurtner, A. (2019). Learning and satisfaction in webinar, online, and face-to-face instruction: A meta-analysis. *Frontiers in Education, 4*(92). https://doi:10.3389/feduc.2019.00092

Fazlinda H., Soo Y.P., Mohd A.S.S., Zainab M. Z., & Mahdalela R. (2020). Exploring students' readiness on English language blended learning. *Asian Journal of University Education (AJUE), 16* (4), Dec 2020 (Special Issues). https://doi.org/10.24191/ajue.v16i4.11948

Guerriero, S. (Ed.) (2017). Teachers' pedagogical knowledge: What it is and how it functions, in Guerriero, S. (ed.). *Pedagogical Knowledge and the Changing Nature of the Teaching Profession*, OECD Publishing. https://doi.org/10.1787/20769679

Gupta, S. K., & Sengupta, N. (2021). Webinar as the future educational tool in higher education of India: A survey-based study. *Technology, Knowledge & Learning, 26*, 1111-1130. https://doi.org/10.1007/s10758-021-09493-7

Ikramudin Junejo, Afzal Khan Memon & Jan Mohammad. (2018). Current practices in higher education institutes in Pakistan and gap reduction between industry and academia: A Systematic Literature Review Approach. *Asian Journal of Contemporary Education, 2*(2), 173-181. https://doi.10.18488/journal.137.2018.22.173.181

Isnin, S. F., Mustapha, R., & Othman, W. M. (2018). Engineering students' perspectives on the need of a new module in technical report writing at Polytechnic in Malaysia. *Journal of Engineering Science and Technology, February* (2018), 31- 38.

Lawrence, R., Lim, F. C., & Haslinda, A. (2019). Strengths and weaknesses of education 4.0 in the higher education institution. *International Journal of Innovative Technology and Exploring, 9* (2S3), 511- 519. https://doi.10.35940/ijitee.B1122.1292S319

Leslie, H. J. (2019). Trifecta of student engagement: A framework for an online teaching Professional development course for faculty in higher education. *Journal of Research in Innovative Teaching & Learning, 13*(2), 149-173. https://doi.10.1108/JRIT-10-2018-0024

Marks, R., & Eilks, I. (2010). Research-based development of a lesson plan on shower gels and musk fragrances following a socio-critical and problem-oriented approach to chemistry teaching. *Chem. Educ. Res. Pract., 11*(2), 129–141. https://doi.10.1039/C005357K

Marquez-Ramos (2021). Does digitalization in higher education help to bridge the gap between academia and industry? An application to COVID-19. *Industry and Higher Education, 35*(6) 630–637. https://doi.10.1177/0950422221989190

M. Awais Hassan, U. Habiba, H. Khalid, M. Shoaib., & S. Arshad. (2019). An adaptive feedback system to improve student performance based on collaborative behavior. in *IEEE Access*, 7, 107171-107178. https://doi.10.1109/ACCESS.2019.2931565

Merriam, S. B. (1988). *Case study research in education: A qualitative approach.* Jossey-Bass.

Muhammad, A.M, Kamil, M. A., & Druckman, Z. A. (2021). Towards a CEFR framework for workplace communication: Students' perceptions of the sub-skills, use and importance of language productive skills (LPS). *Pertanika J. Soc. Sci. & Hum. 29* (S3): 27 - 46 (2021). https://doi.org/10.47836/pjssh.29.S3.02

Muhammad H. T. A., Norwati R., & Mohd I. M. S. (2022). Open and distance learning during the COVID-19 pandemic: University students' learning experiences and academic achievements. *Asian Journal of University Education (AJUE), 18* (1), January 2022. https://doi.org/10.24191/ajue.v18i1.17177

Oliver, D. G., Serovich, J. M., & Mason, T. L. (2005). Constraints and opportunities with interview transcription: Towards reflection in qualitative research. Social Forces, 84 (2), 1273–1289. https://doi.10.1353/sof.2006.0023

Pedroso, J. E.P. (2021). Students' views from webinars: A qualitative study. *International Journal of Arts and Humanities Studies*, 1(1). https://doi.org/10.32996/ijahs.2021.1.1.6

Rajeswari R., Nur H. M. N., Siti N. H. I., & Zeti D. E. (2021). Digital tools acceptance in open distance learning (ODL) among computer science students during COVID-19 pandemic: A comparative study. *Asian Journal of University Education (AJUE), 17*(4), Oct 2021. https://doi.org/10.24191/ajue.v17i4.16194

Torre, D.M, Daley B.J, Sebastian J.L, & Elnicki D.M. (2006). Overview of current learning theories for medical educators. *Am J Med. 2006 Oct,119*(10),903-907. https://doi.10.1016/j.amjmed.2006.06.037