Perception on the Achievement of Course Learning Outcomes of an Undergraduate Final Semester Project Virtual Symposium

Nazarul Azali Razali[1], Ameiruel Azwan Ab Aziz[2], Amirah Mohd Juned[3], Nor Atifah Mohamad[4], Sheik Badrul Hisham Jamil Azhar[5], Sofwah Md Nawi[6], Mohd Amirul Atan[7], and Suhaili Mohd Yusof[8]

[1,2,3,4,5,7]Akademi Pengajian Bahasa, Universiti Teknologi MARA Cawangan Melaka, KM26, Jalan Lendu 78000 Alor Gajah, Melaka, Malaysia, [6,8]Akademi Pengajian Bahasa, Universiti Teknologi MARA Cawangan Johor, Jalan Universiti Off Km. 12 Jalan Muar 85000 Segamat, Johor Darul Ta'zim, Malaysia
Email: [1]nazarul@uitm.edu.my, [2]ameirul@uitm.edu.my, [3]amirahjuned@uitm.edu.my, [4]atifah740@uitm.edu.my, [5]sheik835@uitm.edu.my, [6]sofwah@uitm.edu.my, [7]amirulatan@uitm.edu.my, [8]suhailiyusof@uitm.edu.my

Abstract
The Diploma in English for Professional Communication in Universiti Teknologi MARA (UiTM) is a new academic programme that requires its students to undertake a final semester project-based work. At the end of project, students are to present the aspects and achievements of their projects. Due to COVID-19 and government-imposed movement restrictions, physical poster presentation sessions had to be replaced by a virtual symposium to fulfil the course learning outcomes. Subsequently, there is a need to examine whether this virtual presentation and industry engagement programme have attained the intended learning outcomes. This study investigated the perceptions on the achievement of learning outcomes by participants and presenters of the online virtual symposium. Data were gleaned from an online survey and recorded 214 responses, comprised of academic staff, project supervisors, invited industry experts, students, and student-presenters. The findings revealed that the 'Industry on Campus Virtual Symposium' had managed to achieve the intended course learning outcomes of '*performs essential methods and procedures*', and '*initiate entrepreneurial mindsets in performing essential methods and procedures*'. The participants also indicated that the virtual symposium had achieved other MQF's Practical Skills, and Personal and Entrepreneurial Skills attributes/sub-attributes descriptors. This study has shown that virtual symposiums and other innovative platforms can effectively create a

synergy between academia and industry in providing positive learning experiences to students and achieve their learning outcomes.

Keywords: Course Learning Outcomes, Industry Engagement, Industry on Campus Virtual Symposium, Participants' Perception, Project-Based Work

Introduction

Final semester projects have been part of many tertiary and higher learning academic programmes. These student-centred projects that focus on inquiry and problem-based learning had picked up ground because critical practical work and practices are being replaced with theoretical classes and studies (Halim et al., 2014). Discovery-based learning processes have increased learners' interests and promoted learning designs for higher-order learning outcomes (Spronken-Smith et al., 2012). Through a better understanding of learning approaches, assessment quality, and learning outcomes, students' positive perceptions and motivation on these aspects can be generated to contribute to better learning (Allison, 2015; Leeuwenkamp, Joosten-ten Brinke, & Kester, 2019). As a new and innovative academic programme, the Diploma in English for Professional Communication (LG120) in Universiti Teknologi MARA (UiTM) requires the students to undertake a final semester of project-based work. At the end of the semester, students are required to present the overall aspects and achievements of their projects via a physical poster presentation session. The course learning outcomes (CLOs) for this course are (CLO1) performs essential methods and procedures related to English professional communication discipline (plotted to Malaysian Qualification Framework (MQF) Domains of Learning Outcomes Cluster 3, Functional Work Skills; Practical Skills), and (CLO2) initiate entrepreneurial mindsets in performing essential methods and procedures related to English professional communication discipline (plotted to Cluster 4, Personal and Entrepreneurial Skills). However, due to COVID-19 and government-imposed movement restrictions, the physical poster presentation had to be shifted and replaced by another form of presentation to fulfil the course and programme's learning outcomes. This necessary change affected the practices of both the students and the lecturers. Nevertheless, there is also the need to evaluate and ensure that the students are assessed based on their demonstration and attainment of learning outcomes (Sadler, 2015). Thus, the programme administrators and course designers created a virtual symposium involving invited industry experts named 'Industry on Campus Virtual Symposium'. Due to the change in the poster presentation assessment method, there is a need to determine whether this virtual presentation and industry engagement programme could attain the intended learning outcomes of this final semester project course.

Current Research / Research Questions

This study explores the learning outcomes of Practical Skills, and Personal and Entrepreneurial Skills that have been achieved by the participants and presenters of the online virtual symposium. The research question answered in this study is:

1.   What attributes/sub-attributes of Practical Skills, and Personal and Entrepreneurial Skills were realised by the 'Industry on Campus Virtual Symposium'?

Literature Review

Learning Outcomes

There are many approaches to curriculum design. The outcome-based approach in curriculum planning centres on what students are expected to do at the end of a learning period through statements that express the expected learning outcomes (Gosling & Moon, 2001). Malaysia's higher learning institutions practice this educational approach by emphasising learning outcomes outlined by the MQF Domains of Learning Outcomes (Ministry of Higher Education Malaysia, 2016). There are five clusters of Domains of Learning Outcomes stated by the MQF: Cluster 1 Knowledge and Understanding, Cluster 2 Cognitive Skills, Cluster 3 Functional Work Skills—practical skills, interpersonal skills, communication skills, digital skills, numeracy skills, and leadership, autonomy and responsibility, Cluster 4 Personal and Entrepreneurial skills, and Cluster 5 Ethics and Professionalism (Malaysian Qualifications Agency, 2017, 2019). The Programme Standards: Language document outlines the standard practices for language programmes and recommends delivery and assessments methods according to learning outcomes, and one of the designs stated is project-based learning (Malaysian Qualification Agency, 2019).

Project-based Work

Project-based work provides quality learning by providing holistic learning experiences to equip undergraduate students with the hard and soft skills demanded by the job market, such as strengthening personal attitudes and values, leadership, teamwork, communication, and problem-solving skills (Shariff, Johan, & Jamil, 2013; Choy, Yim, & Tan, 2018). This design gives students the prospect to explore student-centred learning by demonstrating knowledge and skills based on their interests, abilities, and learning styles that were acquired from a learning programme (Hubball & Burt, 2007; Halim et al., 2014). To demonstrate their language and communication abilities, the students could engage in project-based work such as presentations, performing transcriptions, translation activities, report writing, creative and copywriting, and others (Malaysian Qualification Agency, 2019).

Industry Engagement

Industry engagement has become an important element as the synergy between educational institutions and industry brings many benefits to the parties involved. Educational institutions could receive responses about their academic program and recommendations for improvement from the industry's perspective, while the industry could benefit from talent selection through internships (Burns & Chopra, 2017). Most importantly, students gain real-world knowledge and experience through engagement activities such as inviting guest speakers, virtual site tours, case studies and others (Burns & Chopra, 2017).

Previous Studies

Male and King (2019) found that students who engage in industry placements through workplace-based activities acquired a lot of effective and positive experiences, but acknowledged through students' responses that currently, it is not easy to get quality industry placements. Therefore, a combination of a well-constructed in-curriculum and extra-curricular activities such as online interviews with experts, simulated workplace communication with experts, and authentic project-based tasks connected through virtual reality may allow for an alternate way to provide workplace and real-world experiences to

the students (Male & King, 2019). According to Goh, Leong, Kasmin, Hii and Tan (2017), carefully designed e-learning settings allow students to exchange and share knowledge with peers and instructors, increasing their satisfaction and achieving learning outcomes.

Imbi, Neo and Neo (2020) found that students gave positive reactions to web-based online learning where the students stated that online learning via the right platform and multimedia increases their motivation and makes their learning enjoyable. Even blended learning programs, if designed amicably, can bring about high levels of learning attainment and satisfaction as students engage in collaborative tasks that require interaction between peers and instructors (Karimi & Tunku Ahmad, 2013). Anwar, Hanafiah and Amran (2017) found that academic undergraduate courses that require a higher level of skills in technology and multimedia be undertaken in the later stages of the curriculum as the older students get into a learning program, the better he or she is equipped in term of experience, knowledge, and maturity to handle technology and multimedia tools, and display their creativity.

In a study investigating engineering students' project-based 3-D virtual trad fair-style pitching presentation, Lee et al (2016) found that students benefitted as they received essential support and valuable feedback from peers and instructors, which significantly reduced confusion and frustrations while undertaking the project. Furthermore, the virtual fair allowed for open connection and communication between the students and industry experts where students felt the increase in motivation and understand the context and relevance of their project to the industry while the experts indicated that they also benefitted and enjoyed the virtual exercise (Lee et al., 2016).

Methods
Samples & Research Procedures
This study elicited responses from those who attended the virtual symposium. A total of 214 responses were recorded from academic staff/lecturers, project supervisors, invited industry experts, students, and student-presenters. The lecturers, project supervisors, students and student-presenters were affiliated with Universiti Teknologi MARA Cawangan Melaka and Universiti Teknologi MARA Cawangan Johor. The industry panellists were invited from various industries related to this language programme's nature and businesses. They comprised professionals from the field of creative writing, publication, content writers, proofreaders, translators, entrepreneurs, content creators, and experts in English and communication. The academic staff here refers to lecturers and tutors who were not involved with the final semester project. Participants were asked to voluntarily answer an online survey at the end of the symposium.

Instrument
The online survey utilised the Google Form platform, and all items used a 5-point rating scale ranging from 5 (strongly agree) to 1 (strongly disagree). The online survey consisted of two sections: demographic data of the respondents and perception of the virtual symposium's achievement of CLOs. The items were adapted from skill descriptors from MQF's Domains of Learning Outcomes Cluster 3, Functional Work Skills: Practical Skills, and Cluster 4, Personal and Entrepreneurial Skills based on MQAs Malaysian Qualifications Framework 2.0 (2017) and Programme Standards: Language (2019). There are thirteen items overall; six items for CLO1—Functional Work Skills: Practical Skills, and seven items for CLO2—Personal and

Entrepreneurial Skills. Items extracted from the survey are presented in Table 1 (the complete list of items is presented in Appendix 1).

Table 1

Section	Items
Section 1: Demographic Data	
Section 2: Industry on Campus Virtual Symposium	**Cluster 3 (6 items): Functional Work Skills – Practical Skills** - apply the skills of planning and organisational skills - reflect on practices and processes undertaken during the presentation/symposium - make adjustments to practices and processes carried out during the presentation/symposium **Cluster 4 (7 items): Personal and Entrepreneurial Skills** - develop realistic career and professional goals - explore and engage in activities relating to entrepreneurship - resolve (identified) problems and/or issues in English and professional communication occurring in the social and professional community

Data Analysis
Cronbach Alpha analysis was performed for reliability analysis and is presented in Table 2. Data were analysed using descriptive statistical analysis and interpreted through means and standard deviations.

Table 2
Reliability Analysis of Survey Items According To Learning Outcomes

Learning Outcomes	Cronbach's Alpha	N of Items
CLO1 Functional Work Skills: Practical Skills	.968	6
CLO2 Personal and Entrepreneurial Skills	.967	7

Results
The results of this study are presented through mean values and standard deviation. The distribution of the respondents is presented in Table 3. The most significant respondents were students; student participants (47.7%), and student-presenters (20%). This is followed by project supervisors (23.8%).

Table 3
Respondents' Categories

Participation Category	N	%
Academic Staff	13	6.1
Industry Panellists	5	2.4
Student Participants	102	47.7
Student-Presenters	43	20.0
Supervisors	51	23.8
total	214	100

Perception on Attributes/Sub-attributes of Functional Work Skills: Practical Skills Attained by the 'Industry on Campus Virtual Symposium'
The general perception of the achievements of the 'Industry on Campus Virtual Symposium' to the learning outcomes is presented in Table 4. On average, both CLOs recorded a high mean value of 4.593 for CLO1 and 4.579 for CLO2. According to respondents' category, the highest mean for both CLOs were by academic staff (CLO 1 mean 4.936, CLO2 mean 4.901) and industry panellists (CLO 1 mean 4.867, CLO2 mean 4.829). This is followed by student-presenters (CLO 1 mean 4.651, CLO2 mean 4.625) and project supervisors (CLO 1 mean 4.625, CLO2 mean 4.563).

Table 4
CLO Achievement of the Virtual Symposium

Participation Category		CLO1	CLO2
Academic Staff	Mean	4.936	4.901
	N	13	13
	Std. Deviation	.160	.221
Industry Panellists	Mean	4.867	4.829
	N	5	5
	Std. Deviation	.298	.383
Student Participants	Mean	4.503	4.515
	N	102	102
	Std. Deviation	.519	.530
Student-Presenters	Mean	4.651	4.625
	N	43	43
	Std. Deviation	.504	.507
Supervisors	Mean	4.609	4.563
	N	51	51
	Std. Deviation	.505	.506
Total	Mean	4.593	4.579
	N	214	214
	Std. Deviation	.504	.510

Table 5 presents the results of participants' perception towards the virtual symposium's attainment of Functional Work Skills: Practical Skills learning outcome descriptors across participant categories. The highest mean was recorded by *'apply various English language*

and professional communication skills to present and respond to ideas' (4.63) and *'apply the skills of planning and organisational skills'* (4.60). Other statements recorded almost similar means between 4.57 to 4.59.

For the first item, *'apply various English language and professional communication skills to present and respond to ideas'*, the highest means recorded was 5.00 from academic staff and industry panellists, followed by students-presenter (4.65), and supervisors (4.63). For the second item, *'apply the skills of planning and organisational skills'*, a mean of 5.00 was recorded for responses from academic staff and 4.80 for industry panellists. Item three *'apply a range of skills in selecting tools, materials and technology as required by the presentation/symposium'* highest mean was 5.00 by industry panellists, 4.92 for academic staff, and 4.65 for student-presenters. Item four, *'apply various skills in selecting methods and procedures suitable for the presentation/ symposium'* scored 4.92 by academic staff, 4.80 by industry panellists, and 4.70 by student-presenters. *'Reflect on practices and processes undertaken during the presentation/ symposium'* recorded the highest mean of 4.85 by academic staff, 4.80 by industry panellists, and 4.63 for both student-presenters and supervisors. The list skill descriptor item for CLO1, *'make adjustments to practices and processes carried out during the presentation/ symposium'*, recorded means of 4.92 (academic staff), 4.80 (industry panellists), 4.63 (student-presenters), 4.57 (supervisors), and 4.48 (student participants). Student participants consistently recorded lower mean scores for each item.

Table 5
Functional Work Skills: Practical Skills Learning Outcomes Achieved By The Virtual Symposium

Learning Outcomes Descriptors	Participation Category																	
	Academic Staff			Industry Panellists			Student Participants			Student-Presenters			Supervisors			Total		
	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s	μ	N	s
apply various English language and professional communication skills to present and respond to ideas	5.00	13	.00	5.00	5	.00	4.55	102	.556	4.65	43	.529	4.63	51	.528	4.63	214	.531
apply the skills of planning and organizational skills	5.00	13	.00	4.80	5	.447	4.52	102	.558	4.65	43	5.29	4.59	51	.536	4.60	214	5.37
apply a range of skills in	4.92	13	.277	5.00	5	.00	4.50	102	.576	4.65	43	5.29	4.61	51	.532	4.59	214	.547

Item	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s
selecting tools, materials and technology as required by the presentation/ symposium																		
apply a variety of skills in selecting methods and procedures suitable for the presentation/ symposium	4.92	13	.277	4.80	5	.44	4.47	102	.558	4.70	43	.513	4.63	51	.528	4.59	214	.538
reflect on practices and processes undertaken during the presentation/ symposium	4.85	13	.376	4.80	5	.44	4.49	102	.576	4.63	43	.536	4.63	51	.528	4.58	214	.549
make adjustments to practices and processes carried out during the presentation/ symposium	4.92	13	.277	4.80	5	.44	4.48	102	.593	4.63	43	.536	4.57	51	.539	4.57	214	.559

$\bar{x}$ = sample mean, n = sample size, s = sample standard deviation, μ = population mean

Perception on Attributes/Sub-attributes of Personal and Entrepreneurial Skills Attained by the 'Industry on Campus Virtual Symposium'

Presented in Table 6 are the results of the analysis of responses for CLO2 Personal and Entrepreneurial Skills descriptors. The highest mean score was recorded by item *'identify common problems and/or issues in English and professional communication occurring in the*

social and professional community' (4.60). Items develop realistic career and professional goals' and 'show interest in professional and civic activities leading to local and region-wide communities building' recorded the same mean score of 4.59.

Academic staff and industry panelists recorded high mean scores across respondents' categories for almost all the items. For item *'identify self-improvement initiatives and possibilities for further learning/education',* academic staff recorded 4.92, industry panellists 4.80, 4.65 for student presenters, and 4.59 supervisors. For *'develop realistic career and professional goals'*, academic staff recorded a mean of 4.85 and 4.80 for industry panellists. *'Explore and engage in activities relating to entrepreneurship'* scored mean values of 4.92 (academic staff), 4.65 (student presenters), and 4.60 (industry panellists). 'Show interest in professional and civic activities leading to local and region-wide communities building' and *'participate in professional and civic activities leading to local and region-wide communities building'* recorded the same mean values by academic staff and industry panellists who are 4.92 and 4.80 respectively. The sixth item for CLO2 is *'identify common problems and/or issues in English and professional communication occurring in the social and professional community',* which recorded means of 5.00 (industry panellists), 4.92 (academic staff), and 4.60 (student-presenters). The last item, *'resolve (identified) problems and/or issues in English and professional communication occurring in the social and professional community'*, obtained mean scores of 5.00 by industry panellists, 4.85 academic staff, 4.58 student-presenters, and 4.57 supervisors. Student participants for all items consistently recorded lower mean scores.

Table 6

Personal and Entrepreneurial Skills Learning Outcomes Achieved by the Virtual Symposium

Learning Outcomes Descriptors	Participation Category																	
	Academic Staff			Industry Panellists			Student Participants			Student-Presenters			Supervisors			Total		
	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s	μ	N	s
identify self-improvement initiatives and possibilities for further learning/education	4.92	13	.277	4.80	5	.447	4.47	102	.575	4.65	43	.529	4.59	51	.536	4.57	214	.550
develop realistic career and professional goals	4.85	13	.376	4.80	5	.447	4.53	102	.575	4.65	43	.529	4.57	51	.539	4.59	214	.547
explore and engage in activities relating to entrepreneurship	4.92	13	.277	4.60	5	.894	4.53	102	.592	4.65	43	.529	4.55	51	.541	4.58	214	.565
show interest in professional and civic activities leading to local and region wide communities building	4.92	13	.277	4.80	5	.447	4.54	102	.575	4.58	43	.587	4.59	51	.572	4.59	214	.564
participate in professional and civic activities leading to local and region wide communities building	4.92	13	.277	4.80	5	.447	4.48	102	.576	4.65	43	.529	4.53	51	.578	4.56	214	.560

	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s	$\bar{x}$	n	s
identify common problems and/or issues in English and professional communication occurring in the social and professional community	4.92	13	.277	5.00	5	.000	4.56	102	.590	4.60	43	.541	4.55	51	.541	4.60	214	.554
resolve (identified) problems and/or issues in English and professional communication occurring in the social and professional community	4.85	13	.376	5.00	5	.000	4.50	102	.609	4.58	43	.545	4.57	51	.539	4.57	214	.567

$\bar{x}$ = sample mean, n = sample size, s = sample standard deviation, μ = population mean

Discussion

The findings of the study suggested that the 'Industry on Campus Virtual Symposium' had managed to attain the intended learning outcomes of the final semester course and the diploma programme. The results showed that the various respondents believed that the virtual symposium, which replaced the physical poster presentation, had achieved the intended learning outcomes. This is proven by the high mean scores obtained for each MQF's Domains of Learning Outcomes descriptor item corresponding to (CLO1) performs essential methods and procedures related to English professional communication discipline, and (CLO2) initiate entrepreneurial mindsets in performing essential methods and procedures related to English professional communication discipline. In fact, it can also be concluded that the virtual symposium has overachieved its own intended learning outcomes, as shown by the high mean scores of other descriptor items, and not just on its own.

The findings also suggest that this virtual symposium had provided a beneficial platform for industry engagement for the students and faculty members. As a programme that allowed academics, students, and industry to come together, the information and knowledge exchange and learning experiences obtained during the virtual symposium had

benefitted all parties involved. Since placement and internships are getting more complex due to various changes in the industry and global issues, in-curricular engagement through electronic and virtual communications might be the way forward for both academia and industry (Male & King, 2019).

Analysis of the study also found observable constant differences across participant categories in their rating of the items. Even though all participant categories obtained high mean values (>4.00 for all items), industry panellists and academic staff were constantly higher compared to others. This is evident with the overall mean values of 4.936 (CLO1) and 4.901 (CLO2) by academic staff and 4.867 (CLO1) and 4.829 (CLO2) by industry panellists. The academic staff and industry panellists were not directly involved in the projects. Therefore, it could be suggested that their opinion was given based on their relevant evaluation of the students' projects to the real world. However, this is an area that may require further investigation. This is then followed by student-presenters and project supervisors constantly recorded almost similar mean scores. The student-presenters and supervisors pair seemed to have formed a kind of mutual understanding over the achievement of learning outcomes and the virtual symposium related to their direct involvement in the final semester project. A comparison between the overall mean values of CLO1 and CLO2 statements between these two participant categories were close; 4.651 CLO1 and 4.625 CLO2 for student-presenters, and 4.609 CLO1 4.563 CLO2 supervisors. Paolini (2015) stated that students' understanding and achievement of learning outcomes could be increased when they feel connected to the material, thus increasing their motivation through positive actions of their instructors. On the other hand, student participants were found to be constantly providing the lowest mean scores across CLOs and items; overall mean of 4.503 for CLO1 and 4.515 for CLO2. This could be due to several factors that may require further examination. One possible reason could be their lack of understanding of the CLOs and final semester project, as this is a course they have yet to undertake.

Conclusion
Based on the findings of the study, it can be established that the 'Industry on Campus Virtual Symposium' had managed to accommodate the final project presentation assessment and industry engagement yet still achieve the intended course learning outcomes. Respondents from the various background is of the perception that this virtual symposium held due to movement restrictions caused by the COVID-19 pandemic had managed to not only directly showcase students' achievement of the MQF's Domains of Learning Outcomes Cluster 3, Functional Work Skills: Practical Skills and Cluster 4, Personal and Entrepreneurial Skills, but indirectly made themselves aware and attain the same learning outcomes.

This study highlights the significance of understanding the perception of immediate stakeholders on the attainment of CLOs through improvised yet innovative means of virtual assessment that is synergised with industry engagement. Programme committees and administrators can use the findings of this study to make decisions related to curriculum review and delivery methods that are inclusive and holistic. Future studies could also be conducted on the possibility of using other platforms for the virtual symposium (Lee, et al., 2016). Another suggestion that is related to the findings of the study is to investigate the differences in perception that those with direct involvement (i.e., supervisors and student-presenters who are project owners) with the final project had with those who were indirectly involved (i.e., industry experts, non-supervisory academic staff, and students who have yet to undertake this project-based work). This study has shown that virtual symposiums and

conventions can effectively create a synergy between academia and industry in providing positive learning experiences to students and achieve their learning outcomes.

Acknowledgement
We would like to thank all those involved with the virtual symposium and those who contributed to the completion of this research.

Declaration
The authors have no conflicts to declare.

References

Anwar, K., Hanafiah, H., & Amran, S. N. (2017). Korelasi di antara pengalaman pembelajaran dan pencapaian pelajar dalam kursus multimedia interaktif: Tinjauan awal. In R. Sukardi, J. Jaafar, Z. Tarmudi, R. U. Mohammed, A. Jawan, M. I. Ismail, & A. A. Karia (Ed.), *e-Prosiding Kolokium Akademik 2017* (pp. 29-33). Kota Kinabalu: Universiti Teknologi MARA Cawangan Sabah.

Burns, C., & Chopra, S. (2017, January). A meta-analysis of the effect of industry engagement on students learning in undergraduate programs. *The Journal of Technology, Management, and Applied Engineering, 33*(1), 2-20.

Choy, S. C., Yim, J. S., & Tan, P. L. (2018). The mediating effects of quality learning on the overall experience and learning outcomes of STEM Malaysian students. *ICHSS 2018* (p. 05004). SHS Web of Conferences. doi:https://doi.org/10.1051/shsconf/20185305004

Gerritsen-van Leeuwenkamp, K. J., Joosten-ten Brinke, D., & Kester, L. (2019). Students' perceptions of assessment quality related to their learning approaches and learning outcomes. *Studies in Educational Evaluation, 63*, 72-82. doi:https://doi.org/10.1016/j.stueduc.2019.07.005

Goh, C. F., Leong, C. M., Kasmin, K., Hii, P. K., & Tan, O. K. (2017). Students' experiences, learning outcomes and satisfaction in e-learning. *Journal of e-Learning and Knowledge Society, 13*(2), 117-128. doi:10.20368/1971-8829/1298

Gosling, D., & Moon, J. (2001). *How to use learning outcomes and assessment criteria.* London: SEEC.

Halim, M. A., Buniyamin, N., Imazawa, A., Naoe, N., & Ito, M. (2014, December). The role of final year project and capstone project in undergraduate engineering education in Malaysia and Japan. In *2014 IEEE 6th Conference on Engineering Education (ICEED)* (pp. 1-6). IEEE.

Hubball, H., & Burt, H. (2007). Learning outcomes and program-level evaluation in a four-year undergraduate pharmacy curriculum. *American Journal of Pharmaceutical Education, 71*(5), 1-8.

Imbi, Z. C., Neo, T.-K., & Neo, M. (2020). A case study on web-based learning environment evaluation in higher education: Learner perspectives in a private university in Malaysia. *International Journal of Creative Multimedia, 1*(2), 18-33. doi:https://doi.org/10.33093/ijcm.2020.2.2

Karimi, L., & Tunku Ahmad, T. B. (2013). Perceived learning and satisfaction in a blended teacher education program: An experience of Malaysian teacher trainees. *Contemporary Education Technology, 4*(3), 197-211.

Lee, M. J., Nikolic, S., Vial, P. J., Ritz, H. C., Li, W., & Goldfinch, T. (2016, November). Enhancing project-based learning through students and industry engagement in a video-augmented 3-D virtual trade fair. *IEEE Transactions on Education, 59*(4), 290-298.

Malaysian Qualification Agency. (2019). *Programme Standards: Language.* Cyberjaya, Selangor: Malaysian Qualifications Agency.

Malaysian Qualifications Agency. (2017). *Malaysian qualifications framework (MQF) 2nd Edition.* Petaling Jaya, Malaysia: Malaysian Qualifications Agency.

Male, S. A., & King, R. (2019). Enhancing learning outcomes from industry engagement in Australian engineering education. *Journal of Teaching and Learning for Graduate Employability, 10*(1), 101-117.

Ministry of Higher Education Malaysia. (2016). *iCGPA rubric learning outcomes assessment guide.* Putrajaya, Malaysia: Ministry of Higher Education Malaysia.

Paolini, A. (2015). Enhancing teaching effectiveness and student learning outcomes. *The Jurnal of Effective Teaching, 15*(1), 20-33.

Sadler, D. R. (2015). Three in-course assessment reforms to improve higher education learning outcomes. *Assessment & Evaluation in Higher Education, 41*(7), 1081-1099. doi:http://dx.doi.org/10.1080/02602938.2015.1064858

Shariff, S. M., Johan, Z. J., & Jamil, N. A. (2013). Assessment of project management skills and learning outcomes in students' projects. *Procedia - Social and Behavioral Sciences, 90*, 745-754. doi:doi: 10.1016/j.sbspro.2013.07.148

Spronken-Smith, R., Walker, R., Batchelor, J., O'Steen, B., & Angelo, T. (2012, February). Evaluating student perceptions or learning processes and intended learning outcomes under inquiry approaches. *Assessment & Evaluation in Higher Education, 37*(1), 57-72. Retrieved from http://dx.doi.org/10.1080/02602938.2010.496531

Appendix

Appendix-1

Survey Items

	PERCEPTION ON THE ACHIEVEMENT OF LEARNING OUTCOMES OF THE VIRTUAL SYMPOSIUM
	This symposium has enabled me/the students/the participants to…
	CLO 1: Functional Work Skills: Practical Skills
1	apply various English language and professional communication skills to present and respond to ideas.
2	apply the skills of planning and organisational skills.
3	apply a range of skills in selecting tools, materials and technology as required by the presentation/symposium.
4	apply a variety of skills in selecting methods and procedures suitable for the presentation/symposium.
5	reflect on practices and processes undertaken during the presentation/symposium.
6	make adjustments to practices and processes carried out during the presentation/symposium.
	CLO 2: Personal and Entrepreneurial Skills
7	identify self-improvement initiatives and possibilities for further learning/education.
8	develop realistic career and professional goals.
9	explore and engage in activities relating to entrepreneurship.
10	show interest in professional and civic activities leading to local and region-wide communities building.
11	participate in professional and civic activities leading to local and region-wide communities building.
12	identify common problems and/or issues in English and professional communication occurring in the social and professional community.
13	resolve (identified) problems and/or issues in English and professional communication occurring in the social and professional community.