INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN PROGRESSIVE EDUCATION & DEVELOPMENT

HRMARS MANAGEMENT ACADEMIC RESEARCH SOCIETY EXPLORING INTELLECTUAL CAPITAL

www.hrmars.com

ISSN: 2226-6348

A Study on Effectiveness of Industrial Talk Approaches for Geology Course

Doris Asmani Mat Yusof, Nora Farina Mohd Halim, Nur Muizzah Nawi, Siti Shahida Sharipudin and Nor Mayuze Mohamad

To Link this Article: http://dx.doi.org/10.6007/IJARPED/v12-i1/16109 DOI:10.6007/IJARPED/v12-i1/16109

Received: *09 November 2022,* ***Revised:*** *11 December 2022,* ***Accepted:*** *26 December 2022*

Published Online: *03 January 2023*

In-Text Citation: (Yusof et al., 2023)

To Cite this Article: Yusof, D. A. M., Halim, N. F. M., Nawi, N. M., Sharipudin, S. S., & Mohamad, N. M. (2023). A Study on Effectiveness of Industrial Talk Approaches for Geology Course. *International Journal of Academic Research in Progressive Education and Development*, *12*(1), 60–68.

Vol. 12(1) 2023, Pg. 60 - 68

http://hrmars.com/index.php/pages/detail/IJARPED | **JOURNAL HOMEPAGE**

Full Terms & Conditions of access and use can be found at
http://hrmars.com/index.php/pages/detail/publication-ethics

INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN PROGRESSIVE EDUCATION & DEVELOPMENT

MARS MANAGEMENT ACADEMIC RESEARCH SOCIETY
EXPLORING INTELLECTUAL CAPITAL

www.hrmars.com
ISSN: 2226-6348

A Study on Effectiveness of Industrial Talk Approaches for Geology Course

Doris Asmani Mat Yusof, Nora Farina Mohd Halim, Nur Muizzah Nawi, Siti Shahida Sharipudin and Nor Mayuze Mohamad

School of Civil Engineering, College of Engineering, Universiti Teknologi MARA, Johor, Malaysia

Corresponding Author's Email: dorisasmani@uitm.edu.my

Abstract

An industrial talk program that includes participation and cooperation from the industry has been introduced in an endeavor to produce professional and competent engineers. The Diploma in Civil Engineering Universiti Teknologi MARA (UiTM) student program has recommended the implementation of industrial talks and site visits. One of the course codes that has been designed with industry involvement is Geology (ECG253). The programme outcomes (PO7) component related to sustainability and the environment is the major focus of this course's industrial talk. In order to validate the suggested event has achieved the targeted POs, a survey was conducted to the student who attended this industrial talk. The purpose of the survey is to study the effectiveness of the industrial talk towards the advancement of knowledge of the students related to the exposure of the industry. A total number of 180 students took the survey, and a qualitative analysis was done. The outcome of this study showed that 97 percent of the student participated in the survey agreed that the industrial talk give a positive impact to the student development. It can be said that the implementation of the industrial talk to the students give a good impact to their lifelong learning experiences and nurture them on the preparation of work environment.

Keywords: Industrial Talk, Effectiveness, Program Outcomes, Geology, Qualitative

Introduction

Nowadays, a decent job with an attractive income and minimum number of necessities has become quite tough to get in this competitive age solely because certain qualifying certificates and degrees are lack of practical experience and a knowledge of the ins and outs of the workplace. Therefore, it has become crucial for institutions to offer students with a high-quality education that includes both practical experiences and theoretical understanding. Additionally, every student has a fundamental right to receive a decent education, especially in higher education as a student's life is about to undergo a major transformation as he prepares to become independent.

An outcome-based education (OBE) system was implemented in line with the Faculty of Engineering's UiTM mission, which is to develop the engineers who are dynamic, innovative, and ethical. This system places a strong emphasis on the development of undergraduate students' potential and soft skills, with the goal of producing graduates who not only have a solid engineering foundation but also are aware of the most recent information on engineering technology and practices. Subsequently, they will be more responsible for changes in the surrounding environment, such as social, environmental, and community changes (Embi 2010; Nor et al., 2005; Heywood, 1997; Palmer et al., 2008).

To achieve these goals, the faculty have created a variety of teaching and learning strategies to achieve the desired program outcomes (POs). The deployment of industrial talks and visits is one of the strategies. For the ECG253 course, the industrial talk is aligned with PO7 which is to understand and evaluate the sustainability and impact of engineering technician work in the solution of well-defined engineering problems in societal and environmental contexts.

Moreover, the industrial talk is a one technique for students to appreciate their theoretical learning to a more practical learning is via exposure to industry surroundings and experiences. In order to offer improved methods for industrial visit and talk activities, Markom M. et al. 2011; address the strengths, and limitations in conducted the event in their finding purposely to improve students development. Gentelli (2015); Roberts et al (2020); also examines the influence of using guest lecturers, specifically working professionals from the industry, and the related effects of limiting small group discussion and providing continuity between lectures on undergraduate student learning.

Maukoda et al (2019); investigated in their study why students attend guest lectures and what factors affect their attendance in three common academic fields (management, pharmacy and engineering). In giving guest lectures to students studying management, pharmacy, and engineering, this study aids academics in understanding the relative significance of knowledge, abilities, and attitude. The study, which looks at the variables that affect students' motivation levels to attend guest lectures, is the first of its type in the setting of higher education (Maukoda et al., 2019)

In addition, to enabling improved knowledge and learning regarding practical exposure and real-life industry experience in comparison to theoretical knowledge supplied in the classrooms, Kumari S et al. has been successful in acknowledging the function and relevance of industrial talks (Kumari et al., 2021; Gupta et al., 2021). Additionally, it is demonstrated that knowledge gained through industry discussions lasts a long time and has a significant impact such as bridging the gap between classroom learning and real experience, given the chance for subject-related inquiries to be asked and offering relevant, real-world experience (Kumari et al., 2021). Thus, the main goal of this study is to examine the effectiveness of the industrial talk towards the student’s knowledge and practical exposure on real life industry experience through this geology course.

Methodology

All Diploma in Civil Engineering students who taking ECG253 course are served by the industrial talks and site visits. Since pandemic Covid-19, the frequency of industry site visits is limited compared to industrial talks. Industrial talk is scheduled at least once for every semester. The industrial talk mostly addresses the general topics related to Geology course syllabus content. In addition, the aims are to provide an exposure to the sustainable development work and some overview regarding the workplace environment in the industry.

Currently, the syllabus content in ECG253 course is designed with an involvement of industry exposure such as industrial talks or site visits. This involvement is purposely designed to make sure that it is aligned with the program's curriculum requirement.

An industrial talk is designed for every semester in order to give the opportunity to the student in engagement with the industry. The main purpose of this event is to meet the requirements of the ECG253 course content. Additionally, it aims to expose students to the current industry's efforts being made in the aspect of sustainable development. Following that, the event session focused on the industry experiences was created to put a foundation on a realistic overview of what Diploma in Civil Engineering students will face after they are graduated.

Since there was no site visit conducted during semester March - July 2022, this study will only take the data gathered from the industrial talk to take into consideration. Based on the feedback and observations provided by the students in the questionnaires, the effectiveness of the event's implementation will be evaluated. A total number of 180 students were participated in the industrial talk which also was the respondent for the survey. These students were enrolled in ECG253 course during semester March – July 2022.

An assessment of the effectiveness of this industrial talk has been made based on the analysis and interpretation of the data that have been gathered. At the conclusion of this paper, suggestions for enhancing the program implementation will be explained. Figure 1 summarizes the proposed action research's flow chart.

On July 7, 2022, the industrial talk event conducted successfully by using online platform (Microsoft Teams meeting). Colleagues of Civil Engineering, UiTM Johor Branch Pasir Gudang Campus through Special Interest Group (SIG): Sustainable Engineering Material Research Group has taken the initiative to organized and conducting a webinar entitled "Geological Engineering for Sustainable use of Earth's Resources". To assess the success of the industrial talk, questionnaires were given to all students.

The students were given a total of 8 qualitative questions, and the evaluation was based on the Likert scale. The survey which are made up of five levels of student agreement with the statements in the questionnaire. 2 survey questions under assessment criteria of PO7 are designed in ranging from " Strongly Disagree " on a scale of 1 to "Strongly Agree" on a scale of 5. Meanwhile, 5 survey questions under assessment criteria of industrial talk event effectiveness are designed in ranging from "Poor" on a scale of 1 to "Excellent" on a scale of 5. The Likert scale is utilized in this study because it offers a balanced evaluation of the quantity of favorable and unfavorable comments for each individual statement.

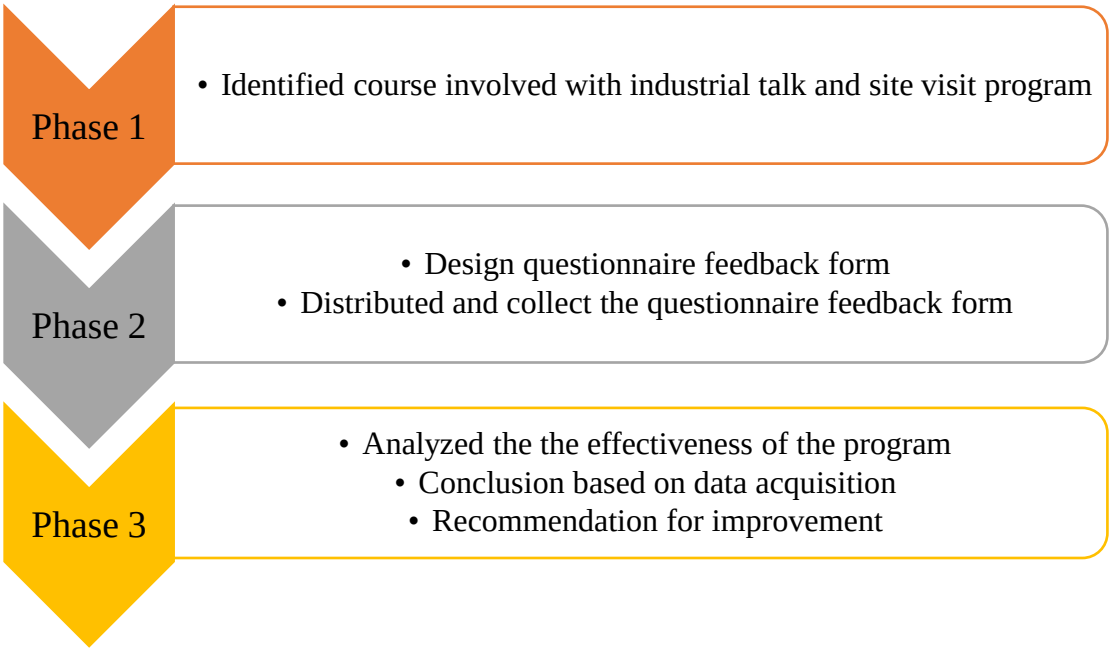

Figure 1: Flow chart for the proposed research methodology

Result and Analysis

Out of the 180 students who taken the survey, 113 (62.78 %) of them were male and 67 (37.22) were females. All the students are from the program Diploma in Civil Engineering, UiTM Johor, Pasir Gudang Campus. These students were at their first year of study but in the second semester. In the second semester, Geology is one of the courses that is set in their study plan and these students is taken the course on semester March – July 2022.

Table 1 provides a breakdown of each analyzed component for this study. There are two sections of assessment listed in the table below which gives the total of 8 questions given to the students. In the first section, there are two questions were asked regarding the program outcome that align with the industrial talk which is PO7 and in the second section is the remaining 6 questions was about the effectiveness of the industrial talk to the students.

Table 1
Summary of the questionnaire assessment

No.	Assessment Section	No. of Questions
1	PO7: Environmental and sustainability	2
2	Industrial talk program effectiveness	6
	Total	8

Based on the assessment criteria of PO7 in Table 2, most respondents "Strongly Agreed" (62.2 %) and "Agreed" (32.8%) that improving one's foundational technical knowledge is necessary for self-sustainable development and will help one to become an ethical and responsible engineer. The respondents also “Strongly Agreed” (62.7%) that the implementation of the industrial talk had given the students a better understanding on solving the engineering problems in societal and environmental contexts.

Table 2
Assessment criteria of PO7 (Environmental and sustainability)

No.	Assessment Criteria	Strongly Disagree (%)	Disagree (%)	Unsure (%)	Agree (%)	Strongly Agree (%)
1	Need of the sustainability concept of civil engineering aspects based on geology course.	0 (0.0)	0 (0.0)	9 (5.0)	59 (32.8)	112 (62.2)
2	Engineering problems in societal and environmental contexts	0 (0.0)	0 (0.0)	7 (3.8)	60 (33.8)	113 (62.7)

Table 3 shows the criteria that have been asked related to the effectiveness of the industrial talk. There are 6 assessment criteria designed to evaluate the effectiveness of this program. According to the student's responses, all the evaluated assessment criteria have scored more than 50% at rate of "Excellent" (5 in Likert scale). For "student expectation on the program", it shows that 116 (64.4%) students choose "Excellent" for the criteria while only 5 (2.8%) students choose "Good". Then, for the "topic presented valuable in providing extra information" showed that 117 (65.0%) students select "Excellent" while just 4 (2.2%) select "Good".

In addition, third criteria which is "program contents include industrial exposure" displayed those 116 (64.4%) students prefer "Excellent" rather than "Good" which is 4 (2.2%) students. Furthermore, for "new information gained from program" criteria shows that 160 (61.1%) students choose "Excellent" while 7 (3.8%) of the students choose "Good". Moreover, for "the speaker presentation skills", 114 (63.3%) of the students prefer "Excellent" rather than "Good" which is 5 (2.8%) students. Lastly according to the table, "the effectiveness of the program" had the highest percentage of students that choose "Excellent" which is 119 (66.1%) compared to other evaluation components.

Table 3
Assessment criteria of industrial talk program effectiveness

No.	Assessment Criteria	Poor (%)	Fair (%)	Good (%)	Very Good (%)	Excellent (%)
1	Student expectation on program	0 (0.0)	0 (0.0)	5 (2.8)	59 (32.8)	116 (64.4)
2	Topic presented valuable in providing extra information	0 (0.0)	0 (0.0)	4 (2.2)	59 (32.8)	117 (65.0)
3	Program contents include industrial exposure	0 (0.0)	0 (0.0)	4 (2.2)	60 (33.8)	116 (64.4)
4	New information gained from program	0 (0.0)	0 (0.0)	7 (3.8)	63 (35.0)	160 (61.1)
5	Speaker presentation skills	0 (0.0)	0 (0.0)	5 (2.8)	61 (33.9)	114 (63.3)
6	The effectiveness of the program	0 (0.0)	0 (0.0)	5 (2.8)	56 (31.1)	119 (66.1)

When it comes to the effectiveness of the industrial talk program, all the assessment components of the survey's results in show that most students (nearly two thirds) agreed that the industrial talk not only makes engineering concepts clearer but also aids in bridging the gap between academic study and practical learning in industry. However, there are some comments from the students which contradict with main finding. Table 4 shows the samples of the comments made by students in response to the survey.

Table 4
Samples of the comments made by the students

No.	Samples of the respondent's remarks
1	*It is a huge pleasure to listen to the guest speaker's experience and knowledge about geology*
2	*Know more about the geology application in civil engineering from the guest speaker who has lots of industry experience*
3	*I know the problems faced by construction industry in Malaysia*
4	*The benefit that I found in this industrial talk is I know how geologist works.*
5	*The slide presentation probably could be better in attracting interest of the student.*
6	*It's a good industrial talk, but don't really have a deep interest in geology*
7	*Difficult to understand because online platform*
8	*The bad audio quality of the video shown*
9	*It will be lacking if someone does not have strong internet*
10	*I think it's such a good talk to introduce students about real scope for engineers in the site. Hope to have this type of talk again in proper place*

From these following remarks, majority of students claimed that industrial talk help students to gain more knowledge regarding geology application in civil engineering. Then, student feel this industrial talk such a huge pleasure when the speaker's shared their work experience and knowledge about geology. Other than that, speaker also introduced the students about real life experiences in engineering industry. However, there are some issues regarding the delivery method of the industrial talk. Due to the current situation of Covid 19, this industrial talk was conducted online. Based on the feedback in Figure 4, 68.8% of the students preferred face to face industrial talk rather than online. This is related to (i) the internet connection, (ii) lack of two-way communication, and (iii) bad audio quality of the video shown by the speaker.

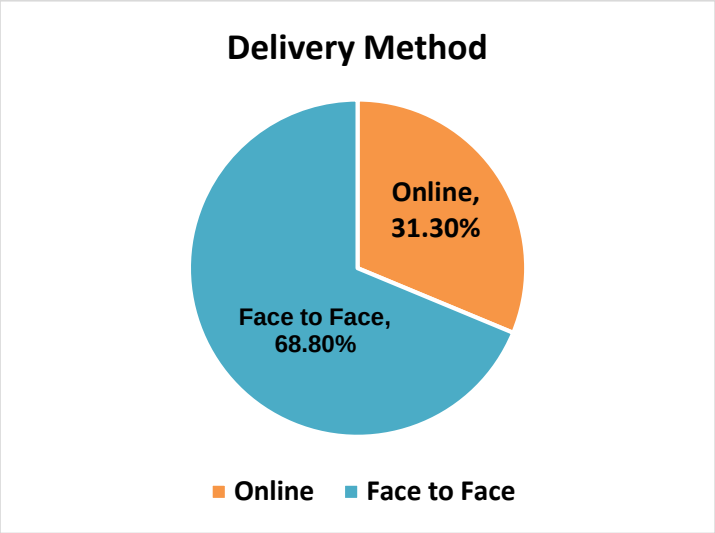

Figure 4: Feedback of the students on the industrial talk delivery method

Conclusion

This paper was aimed at establishing the importance of industrial talk in ECG253 course for Diploma in Civil Engineering students with the help of survey conducted on 180 students. It can be concluded that about 97 percent of the student participated in the survey agreed that the industrial talk is beneficial to student development. Results show that most of the students participated in the survey believe that industrial talk bring clarity to sustainable and engineering concepts, provide overview workplace environment at industry, and an opportunity student engagement with industry.

Moreover, students who responded to the survey also generally saw the inclusion of industry guest speakers in the technical talk as valuable, particularly when the speaker's personal experiences were seen as applicable to a student's own hoped-for future career and when speakers could answer the student's questions about the industry.

Additionally, the value of industrial talk is recognized for their effectiveness, improved concept clarity, facilitation of skill development, provision of practical real-life experience, clarity regarding the nature of the industrial work, value addition, and better understanding, whereas physical lectures are not at all recognized for their value. The research study also shows that most of the student participants were still able to recall what they had learned from the industrial seminars, suggesting that the knowledge they had acquired would always be fresh in their minds. Therefore, the best way to ensure that civil engineering students receive a better-quality in education is to combine theory classroom with additional of regular industrial talk exposure.

References

Embi, M. A. (2010). Panduan Amalan Pengajaran & Pembelajaran Berkesan. Universiti Kebangsaan Malaysia

Gentelli, L. (2015). Using Industrial Professionals in Undergraduate Teaching: Effect on Student learning. Journal of University Teaching & Learning. 12(4), pp 1-11, Available at:http://ro.uow.edu.au/jutlp/vol12/iss4/4

Gupta, R., Kumari, S., & Kaur, H. (2021). Role of industrial visits in enhancing quality learning of commerce and business students. Pensee Journals published by Elsevier. 51 (1), 1071-1082.

Heywood, J. (1997). Outcomes Based Engineering Education I: Theory and Practice in the Derivation of "Outcomes" A European Historical Perspective. *ASEE/IEEE Frontiers in Education Conference*, 1-8

Kumari, S., Gupta, R., & Gill, K. (2021). Role of industrial talk in enhancing learning quality of commerce and business students in view of Covid-19 Scenario. *IOSR Journal of Humanities and Social Science*.Volume 26, Issue 4, Series 5 ,16-26

Manukonda, S. R., Priyadarshini, C., Ponnam, A., and Sode, R. (2019). What motivates students to attend guest lectures? : A comparative study across three popular disciplines in India. International Journal of Learning in Higher Education. 26(1), Available at: http://thelearner.com © Common Ground Research Networks, Sivakoti Reddy Manukonda.

Markom, M., Khalil, M. S., Misnon, R., Othman, N. A., Abdullah, S. R. S., & Mohamad, A. B., (2011). Industrial Talk and Visit for Students. Procedia - *Social and Behavioral Sciences,* 18 (2011) 674 – 682

Nor, M. J. M., Hamzah, N., & Basri, H. (2005). Pembelajaran berasaskan hasil: Prinsip dan cabaran. *Seminar Pengajaran dan Pembelajaran Berkesan*, 54-62.

Nordin, R., Bakar, A. A. A., Zainal, N., & Husain, H. (2011). Preliminary Study on the Impact of Industrial Talks and Visits towards the Outcome Based Education of Engineering Students. Procedia - *Social and Behavioral Sciences,* 60 (2012) 271 – 276

Palmer, S., & Ferguson, C. (2008). Improving outcomes-based engineering education in Australia. *Australasian Journal of Engineering Education*,14(2), 91-104

Roberts, S. J., Johson & Wales. (2020). Undergraduates student perceptions of industry guest speakers in the fashion classroom. *International Textile Apparel Association-ITAA Proceedings, #77*