

In-House English Communication Skills' Needs for Engineering Workplace: Feedback from Human Resource Development

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ABSTRACT

This research is carried out in line with the TVET recognition of the need to produce a highly skilled and trained workforce that is able to adapt to the needs of the industries. The most essential skill that employers aspect from fresh graduates is the ability to communicate in English effectively. This research is carried out from the feedback of The Human Resource Development (HRD) from five different industries in Malaysia. The data was gathered based on the needs of in-house English communication skills for engineering employees. This paper reports on a study of English Communication skills needs by HRD from fresh graduates of TVET background in Malaysia. The study sample consisted of ninety respondents from five different engineering industries around in Malaysia. A set of questionnaires were given to the industries. The study seeks to identify essential in-house English oral and written communication activities practiced by the industries in the workplace. The findings from the feedback of this research provide adequate information on the needs of the TVET institutions to prepare the students in the future productive employment. Besides that, the findings also help to prepare these students in accordance with workplace requirements.

Keywords: *Communication skills, closing-the-gap, employers, engineering industries, in-house English communication skills, TVET institutions, workplace*

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I. INTRODUCTION AND BACKGROUND

English Communication skills are vital in the engineering industries. Communication skills as being the essential tool for engineers which basically establish several core elements such as the fluency of the language and the fundamentals of written communication. Consequently, incorporating English communication skills into engineering courses is an effective way to improve the performance of engineering students in oral and written communication. According to Joesba&Ardeo, (2005) English is the international language of science and technology. Therefore, TVET Engineering graduates must have a range of communication skills to maintain relevance with the global engineering environment of the new millennium.

Currently, in Malaysia, communication skills play an important role in workplace situations. The importance of communication skills is substantial in the engineering sector as stated in most of the job advertisements. The lack of communication skills would mismatch the needs of the industry in Malaysia's economy in the middle-income group of countries (Cherif and Hasanov, 2015). People entering the workforce are assisted by communication skills and employers approve communication skills as basic to most jobs. In a study by Kasim and Ali (2010), the major role of oral communication skills in industries was reported by between 71 to 80 percent of the respondents. It had been ranked the usage of oral communication skills as follows; telephone conversation, informal work-related discussions, meetings, giving oral presentations, explaining and demonstrating to subordinates and other colleagues (Kasim and Ali, 2010).

This study sets out to identify whether in-house English communication skills' needs for engineering workplace based on the Human Resource department's feedback. Literature searches reveal little specific research into the standard of in-house communication practiced in Malaysia. Bearing this in observance this study aims to find out what could be the needs of the engineering industries in terms of in-house English communication practices.

This research aims to contribute to knowledge on two points to the TEVT institutions which produce engineers. Firstly, it aims to provide a detailed investigation of the In-house English oral communication practices within the engineering industries, and secondly, it aims to contribute to providing findings on the written in-house English communication practices.

II. LITERATURE REVIEW

2.1 Communication

Communication an important skill for most professional disciplines. In-house communication is a highly desirable competence in engineering industries. Engineering industries also serve the purpose to give satisfaction to a new need or one which has not yet been met (Wolek 1969:471). With this reason of the engineering field in mind, engineers can be termed as involved an applied science and can be characterized as subject specialists performing group (Hertzum&Pejtersen 2000:2). These results are consistent with what was revealed by (Sageev&Romanowski, 2001) which indicated the engineers spent 64% of the overall time practicing their work in communicating. The engineers are involved in activities that include reporting, designing, supervising, presenting, and construction of an engineering device. All these would involve both oral and written communication skills. In Malaysian settings, employees need to have good communication skills in order to complete various tasks at the engineering workplace. According to Wren (2018), communication skills remain to be the highest priority in industries. Based on research carried out by Passow and Passow (2017) shows that communication is essential to engineering practice, and they spend more than half of their workday (55% - 60%) communicating.

Engineers are involved in wide-ranging of different activities that involve communication such as carrying out projects, managing projects, conducting research, presenting, designing, developing products, and managing. Therefore communication is vital and becomes part of their professional life. However, according to Trevelyan (2014), communication skills will only be compulsory in management positions and it does not involve other job scopes of engineers. However, Kasim and Ali (2010), mentioned that the need for oral communication skills in multinational companies had been reported between 71 to 80. Both written and oral communication had been ranked accordingly by the multinational companies as follows; telephone conversation, informal work-related discussions, meetings, giving oral presentations, explaining and demonstrating to subordinates and other colleagues.

2.1.1 Challenges in Communication

Fundamental to all industries functions is communication. Communication is a means of transmitting information and making oneself understood by another or others (Sanchez &Guo, 2005). The challenges in Communicating effectively are vital and it has to be practiced effectively at the workplace for effective output and efficacious attainment of goals of engineering industries. According to Gunn (2013), the lack of communication skills demonstrated by engineers is not productive. Wisniewski (2018), mentioned that an effective characteristic that an engineer should have would be the ability to interact with wide-ranging audiences by many different medium of communication both in written and orally. This is supported by Tenopir& King (2004). where Engineers are typically not gifted communicators, therefore it can impact their ability to produce high-quality work performance. The use of communication plays an important role to perform and strategize the work effectively. Most of the task as an engineer needs to communicate strategically by using the appropriate structure and message focus, clarity in a spoken and written message, concision, and with a professional tone. Communication can be well-defined as the process of conveying information and common understanding from one person to another (Keyton, 2011).

There is no denying the challenges of communication in the workplace, considering the fact that in an engineering industry it is surrounded by people belonging to different social and educational backgrounds come together to work for the same goals. This implies that every person's communication skills affect both personal and organizational effectiveness (Brun, 2010; Summers, 2010). Engineering communities, therefore, agree that communication is of greatest importance, and it's a challenge both as an integrated part of the engineering work completion and as a necessary competence in delegating tasks at the workplace. Good communication skills are very important to one's success as an administrator (Yate, 2009). Understanding the communication challenges faced by engineers at the workplace is important in order to identify the communication necessities which they encounter in their industry.

To determine the challenges in communication one needs to enhance communication skills. This is because one of the most inhibiting forces to organizational effectiveness is a lack of effective communication (Lutgen-Sandvik, 2010). In order to face new challenges, new opportunities, and on-going varied situations, engineers

have to continually adapt and upgrade their communicative skills required by the industry (Azami et al., 2010). Hence, it is essential for engineers to endeavor to become effective communicators. This is reinforced by Werner, Dickert, Shanmugaraj, Monahan, and Wallach (2017), Communication is a tool and recognized as an important skill for engineers and it is considered a highly necessary competence in the engineering industry. Therefore, the communication process and the importance of communication in the engineering workplace is very important. It is a challenge for the engineers on how they can improve their communication skills and effectiveness to produce high-quality work performance. Therefore, engineers require more than technical skills and must have the creativity and communication abilities to innovate across disciplines (Benson et al., 2010).

III. METHODOLOGY

In order to attain a profound understanding of the industry's needs concerning engineering communication skills and to address the research questions proposed for this study, a quantitative approach was implemented. The study used a survey questionnaire to establish the nature of workplace communication. In a review of studies looking into the needs for engineering work in the use of in-house communication, it is clearly comprehended that specific workplace demands are needed. Therefore, this study examines feedback from five different engineering industries in different fields. Hence a set of questionnaires was distributed to the HR officers from five different industries. The questionnaire had been established with questions required ratings on a scale of 1-5 where, on the questionnaire for very often of in-house communication and often of particular forms of in-house communication, respectively, 1 was the lowest rating, labeled not at all and 5 the highest rating, labeled Constantly. There were three sections in the questionnaire. The first focused on writing communication, second on oral communication skills and the final section of the survey questionnaire was open-end in nature and asked for further comments on the in-house communication that takes place in engineering industries. The survey was sent to The Human Resource personnel after initial phone contacts. These staff members were asked to pass the survey questionnaire on to the appropriate people within their organizations.

The data from the surveys of the study were computer analyzed using Statistical Package for the Social Studies (SPSS). Information was coded according to the survey questionnaire and cross-tabulations and frequency information was determined.

IV. THE FINDINGS AND DISCUSSION

This section presents the results and discussion. It is organized to cover the findings of the engineering industrial in-house oral and written communication needs for engineers from various industries.

4.1 In-house written communication

The role of communication in the engineering professional setting is widely discussed in the literature (Kelly & Evans, 2017; Werner et al., 2017) and was consistently supported in this research. Written communication refers to types of documents, how to write resolutions, and as a mode of communication to the employers. Some of the document types were characteristic were business letters, e-mails, Internal memorandum, project proposals, reports, set of Instructions, general writing, presentation slides, and meeting minutes. Nathans-Kelly and Evans (2017) mentioned that Communication is ever-present in the lives of professional engineers.

Different written communication requirements were identified for in-house communication in engineering industries. The percentages of employer respondents and frequency on written communication in the engineering industrial workplace are shown in Table 1 below. The significance of written oral communication in the engineering jobs had been reflected in the employers' survey questionnaire. In order to determine the workplace practice of written communication, the study survey questionnaire respondents were asked to rate the frequency of written oral communication with numerous workplace groups across different types of engineering fields, department, and company lines. The survey rated e-mail writing as the most important among the other written communication with frequently and often (100%). This is followed by writing reports rated (86%) frequently and often. As for writing business letters, it is rated (62%) frequently and often. Followed by general writing (53%) and presentation slides (52%). The list of important written communication rated was for a set of Instructions/ manual with (74%) rarely and not at all. Studies and reports frequently confirm that communication skills are a priority for employers. For example, in a recent National Association of Colleges and Employers (NACE; 2016) and Job Outlook 2017 report, employers rated the "ability to create and/or edit written reports" (NACE, 2014, p. 35) as highly needed at the workplace. Based on the survey there are three main writing skills of engineers functions as the most important communication modalities which frequently used by engineers. Namely writing e-mails, followed by writing reports and writing business letters. Wisniewski (2018) had provided insights about engineering communication skills that indicated as important

skills in written communication similar to the findings from this research and this is supported by Knisely&Knisely (2015).

In the engineering industrial sectors, engineers need to communicate in a wide range of audiences and need to tailor their messages accordingly. The need to choose the most appropriate medium to communicate in order to get the message across. According to Wisniewski (2018), he mentioned that engineers are involved with frequent writing activities and challenges related to miscommunication in the engineering field. Therefore it is important to have good writing skills. Writing is expected to be clear, concise, and precise, as suggested by Knisely and Knisely (2015). From this finding, it is very clear that engineers must have good writing skills to convey messages through e-mails and reports.

Table 1: Percentage of Employers' Respondents and Frequency for the need of written communication an engineering industries.

Form of written Oral communication	Frequency of Use				
	Not at all	Rarely	Sometimes	Often	Constantly
- Business letters	7%	3%	18 %	30 %	42 %
- E-mail	-	-	-	48 %	52 %
- Internal memorandum	16 %	17 %	30 %	19 %	18 %
- Project proposals	8 %	10 %	39 %	38 %	5 %
- Reports	-	2%	12 %	48 %	38 %
- Set of Instructions/Manual	29 %	15 %	30%	21 %	5 %
- General Writing	-	1 %	39 %	38 %	15 %
- Presentation slides	5%	7%	36%	42%	10%
- Meeting minutes	-	21%	32%	25%	22%

4.2. In-house oral communication

Many challenges concerning oral communication skills have been noticed in the engineering industry. The use of communication is associated with accomplishing work with different backgrounds work together in multiple projects. According to Wren (2018), communication skills continue to be a top priority in the engineering industry. Passow and Passow (2017) specified communication is among the 16 generic competencies which are vital to the engineering workplace. Therefore the main purpose of communication in the engineering industry is communicating with a different groups of people to complete the work.

The percentages of employer respondents and frequency on in-house oral communication in the engineering industrial workplace are shown in Table 2 below. The survey carried out in this research shows that the majority of oral communication was done via telephone with other employees (100%). Similarly, having an informal conversation and socially (100%). These findings supported by Passow and Passow (2017), whereby he mentioned that engineering practice needs to spend more than half of their workday communicating. Gar-vey and Griffith, (1972) discussed the use of oral communication in a variety of channels by which scientific and technical information content is communicated which supports these findings. Conducting or leading discussions (92%), discussing work-related matters informally (82%), and participating in meetings (81%) had been rated highly in this survey. Therefore, oral communication is indeed very important in the engineering industry to accomplish the task. The survey also rated more than 50% of the group oral communication takes place in engineering industries. Different types of needs happen frequently so these communication goals can be achieved. Oral communication in teams (73%), participating in non-technical discussions (71%), and Integrate and communicate technical knowledge in discussions (66%). The list of important oral communication took place had been rated for instructing, explaining, and demonstrating (28%) and conducting briefing (31%). Many studies supporting the claim that communication skills are important for engineers where industry representatives providing reports of the types of communication skills that are reliable with industry needs

(Darling & Dannels, 2003). According to Garvey and Griffith (1972) oral reports, informal discussions, meetings, and conferences are important. This view supports the research findings that having an informal conversation and socially, conducting, or leading discussions, discussing work-related matters informally, and participating in meetings had been rated with high frequency. Supporting further with these findings on the needs of oral communication Kasim and Ali (2010), mentioned multinational companies use oral communication skills to complete the engineering task. Some of the oral communication listed were: telephone conversation, informal work-related discussions, meetings, giving oral presentations, explaining and demonstrating to subordinates and other colleagues.

The human resource department is one of the in-demand sectors of management in Malaysia. Thus, getting their feedback on the use of oral communication is reliable. Therefore, the higher institutions should prepare the students according to the needs of the engineering industries. Human resource department employers find having the ability to communicate well is crucial in order to perform and be successful to function effectively at the workplace.

Table 2: Percentage of Employers' Respondents and Frequency for the need of oral communication in engineering industries

Form of Oral communication	Frequency of Use				
	Not at all	Rarely	Sometimes	Often	Constantly
- Give formal presentations	18 %	22 %	23 %	22 %	15 %
- Participate in meetings	-	1 %	18 %	40 %	41 %
- Participate in non-technical discussions	-	-	29 %	11 %	60 %
- Oral communication in teams	-	-	27 %	38 %	35 %
- Lead discussions	-	-	8 %	52 %	40 %
- Integrate and communicate technical knowledge in discussion	5 %	9 %	20 %	34 %	32 %
- Communicating via telephone	-	-	-	28 %	72 %
- Conduct Briefing	-	33 %	23 %	19 %	12 %
- Discussing work-related matters informally	13 %	-	18 %	39 %	43 %
- Discussing work-related matters formally	-	19 %	19 %	28 %	28 %
- Teleconferencing	-	19 %	19 %	28 %	28 %
- Conversing informally and socially	6 %	8 %	27 %	38 %	27 %
- Networking	-	-	-	10 %	90 %
- Instructing, explaining and demonstrating	-	-	-	10 %	90 %
- Resolving conflicts	-	-	-	-	100 %
- negotiating with teams	-	-	-	-	100 %
- Working in teams.	-	26 %	36 %	14 %	14 %
	10 %	16 %	26 %	22 %	26 %
	10 %	%	22 %	34 %	23 %
	5 %	16 %	16 %	44 %	19 %
	5 %	%			
		16 %			
		%			
	-				

V. CONCLUSION

This study revealed that the respondents who participated in this research agree In-house written and oral communication is crucial. They had responded that both written and oral communication plays an important role to participate in accomplishing engineering task at engineering industries.

Thus, the findings of this study proved that engineering industries see In-house written and oral communication as important. Based on the discussions of the findings obtained from this study, two main conclusions can be drawn for the needs of English communication in engineering industries. First of all, among the most important communicative activities for writing includes writing e-mails, reports, and business letters, general writing, and presentation slides. Next is the oral in-house communication which had been ranked most highly needed were communicating via telephone, conversing informally and socially, lead discussions, discussing work-related matters informally, and lastly participate in meetings. The significance of the study is that TEVT institutions need to prepare the students with suffusion written and oral communication so that they are marketable and able to perform their tasks well at their workplace in the future. The findings provide important input to course developers in their efforts to develop new courses or improving on existing courses geared at Human Resources department TEVT undergraduates.

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