

REVIEW OF SOFT SKILLS OF TVET TRAINEES FROM THE MALAYSIAN ADVANCED TECHNOLOGY TRAINING CENTER (ADTEC)

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ABSTRACT

The Advanced Technology Training Centre (ADTEC) institutions under the Ministry of Human Resource are major players for skilled human resource development in Malaysia. In preparing for the competent workforce, ADTECs are taking active measures to ensure that their trainees are equipped with the necessary soft skills –in addition to technical skill - that are much needed to deal with the complex and challenging workplace. However, integrating soft skills into the training that has traditionally emphasised the technical and vocational skills is not an easy task. The diversity of soft skills elements to be developed, the unique nature of the different training programmes and the difficulty in assessing soft skills are some of the challenges that training centres have to contend with. The purpose of this study was to assess the level of soft skills (communication skills, critical problem solving skills, teamwork skills and leadership skills) acquired by trainees and to identify if there is skills acquired are influenced by types of training programmes. A survey design method was used to study two hundred trainees from the final year of four Diploma programmes in the Batu Pahat Advanced Technology Training Centre (ADTEC) who were selected as respondents for the study. Specifically developed soft skills questionnaire was used to gather data on soft skills. Data obtained on soft skills data were subsequently analysed using descriptive and inferential statistical methods. The results of analysis show that trainees do have high level of soft skills and programmes do not seem to have differential influence on acquisition of soft skills.

Keywords: human capital, human skills, ADTEC trainer

1 INTRODUCTION

Rapid globalization and dynamics utilization of information and communication technology has transformed the international scenario where human resources are recognized as the most important capital in influencing progress and development (Amiruddin & Zainudin, 2015). The quality of human resource development is the core and the most important capital contributor to the success of a country. Clearly, the future success of a country depends on the quality of its human capital, not only in terms of the intellect of but also in terms of the character of its citizens (Abdullah, 2007). The said human capital must have outstanding personalities (Nordin, 2004) which is holistic in nature, where the individual is knowledgeable, confident, adhere to good and high moral values, are ethical, well mannered, polite, disciplined, dynamic, innovative, creative, healthy, patriotic, fair, progressive, courageous and competitive (Othman & Amiruddin, 2010).

Every year, higher education institutes and skills training centres are expected to produce students who have achieved the required qualifications for them to venture into the various fields in the world of work. Having the necessary soft skills has been a strong consideration by employers, to the extent that some firms place soft skill as their priority in recruiting employees. Therefore, training institutes must ensure that their trainees acquire these soft skills so that their graduates are accepted for employment after graduation. Soft skills, generic skills, social skills and people skills are some of the terms used to denote the group of skills that include communication skills, problems solving skills, leadership skills etc. However, labour market statistics show that some graduates from higher education institutions and local skills training centres do not fulfil the workplace demand with respect to soft skills requirements. Furthermore, the number of unemployed graduates is on the increase with an estimated value of 11% of the total unemployed in Malaysia in 2005 (Utusan Malaysia, 2005). Among the key factors that have been identified as the cause of the increasing number of unemployment among graduates is their low level of soft skills (Othman et al., 2011; Amiruddin et al., 2015). Soft skills is so important that according to a study conducted by the Centre for Academic Development (CADE) UPM, issues related to soft skills ranked top ten during an interview compared to academic issues which is ranked eighteen (Mohamad & Azal, 2008). This is thus the reason for the need to enhance the soft skills technical and vocational education trainees. Hence, teaching soft skills have received greater emphasis in all training sectors under the relevant ministries.

Although the need to provide training for soft skills development is appreciated, teaching soft skills are challenging (Shakir, 2009; Taylor, 2016) and more difficult compared to teaching hard skills (Robles, 2012) and thus soft skills implementation in the classroom is still weak (Taylor, 2016) while the effectiveness of soft skills teaching are not clear (Groh et. al, 2016). Robles, (2012) suggest that poor integration of soft skills in the classroom are attributed to high teachers' teaching load, content heavy syllabus and uncertainty in the right approach to teach soft skills. Furthermore, difficulty in evaluating changes in soft skills or lack of skills is also an issue affecting soft skills development efforts (Groh et. al., 2016). Despite the challenges, training institutes have taken the steps to promote soft skills among their trainees using whatever approaches that they perceived as suitable.

Training institutes in Malaysia, despite being under multiple Ministries and agencies have taken initiatives to inculcate soft skills development among their trainees. As a major player for

skilled human resource development in Malaysia, the Advanced Technology Training Centre (ADTEC) institutions under the Ministry of Human Resource Malaysia are taking active measures to ensure that their trainees are equipped with the necessary soft skills –in addition to technical skill - that are much needed to deal with the complex and challenging workplace. This study was carried out to assess the achievements of their efforts in integrating soft skills development among their trainees. Specifically, the objectives of this study were to assess the level of soft skills possessed by graduating trainees and to determine if training programmes are associated with level of soft skills. The following research questions were formulated to guide the study.

- i. What is the level of communication skills among trainees?
- ii. What is the level of critical problem solving skills among trainees?
- iii. What is the level of teamwork skills among trainees?
- iv. What is the level of leadership skills among trainees?
- v. Is there any significant difference in soft skills level between trainees from different programmes?

2 METHODOLOGY

The survey method which is a non-experimental quantitative research design method was used in this study. The survey method was chosen as it allows researchers to gather a large set of data from many respondents (Marican, 2006) and facilitate the reporting of quantitative information of a population from the selected sample of that population (Lim, 2007).

2.1 Population and sample

Four main factors dictate the size of the study sample namely, the type of study, type of population, expenditure and variable of interest which determine the selection of subjects of specific characteristics as respondents (Chua (2006). The population for this study were final year trainees in Advanced Technology Training Centre (ADTEC) and the sample were two hundred final year trainees from four Diploma programmes in the Batu Pahat ADTEC. The programmes were under the Welding Department, the Department of Computer Networks, the Electrical and Electronics Department and the Department of Mechanical and Production. The samples were selected randomly and the number was determined using the sample table from Krejcie and Morgan (1970).

2.2 Research Instrument

Self-report questionnaires were used as the data gathering instrument for this study as it is practical, cost-effective, requires less energy and less time consuming compared to the alternatives such as using interview protocol (Lim, 2007). A specifically designed questionnaire was used in this study which consists of 5 parts namely, Part A (demography), B (assessing

communication skills), C (assessing critical problem solving skills), D (assessing teamwork skills) and E (assessing leadership skills). Two demographic items are used to gather data on gender and department. Items from this section were designed after *Thurstone's* which allows respondents to choose one of the listed options (Abdul Ghafar, 1999). Part B up to Part E consisted of items designed to assess trainees' soft skills as outlined by the Malaysia Ministry of Higher Education (MoHE). Respondents were asked to state their level of agreements on the five-point Likert scale. The four sets of soft skills items corresponds to the four elements of soft skills most desired by employers namely, communication skills, critical problem solving skills, teamwork skills, and leadership skills. These four soft skills elements also corresponds to the critical professional success factors as suggested by Berglund and Heintz (2014) and Taylor (2016). The number of items for each part is shown in table 1.

Table 1. Number of Items by Sections

Sections	Item	Number of Item
Part A	Demography	2
Part B	Communication Skills	19
Part C	Critical Problem Solving Skills	14
Part D	Teamwork Skills	16
Part E	Leadership Skills	19
Total Item		70

2.3 Data analysis and results

Data were analysed using descriptive and inferential statistical methods with the aid of the Statistical Packages for Social Science (SPSS) version 21. Descriptive statistics were used to describe variables and inferential statistics were used to generalize the results obtained from the sample to the population. Data from Part A on respondents' personal data were analysed using frequencies and percentages. Data from Part B until Part E, were analysed and used to answer the main research questions i.e., whether the softs skills are at low, medium or high. Data from the initial five-point Likert scale were grouped into three categories for ease of interpretations as shown in Table 3. Summary of the methods used for analysing the collected data is shown in Table 4.

Table 3. Data Interpretation based on Range of Mean

Level	Range of Mean
Low	1.00 until 2.33
Medium	2.34 until 3.67
high	3.68 until 5.00

Table 4. Methods of Data Analysis according to Questions

No.	Research Questions	Analysis method
1	What is the level of communication skills among trainees?	Descriptive statistics (mean score, frequency, percentage and standard deviation)
2	What is the level of critical problem solving skills among trainees?	Descriptive statistics (mean score, frequency, percentage and standard deviation)

Table 4. Continues

No	Research Question	Analysis
3	What is the level of skills in teamwork among trainees?	Descriptive statistics (mean score, frequency, percentage and standard deviation)
4	What is the level of leadership skills among trainees?	Descriptive statistics (mean score, frequency, percentage and standard deviation)
5	Is there any significant difference in soft skills level between trainees from different programmes?	Inferential statistical analysis (one way ANOVA)

3 RESULTS

Two hundred questionnaires were distributed and returned and subsequently analysed according to research questions.

The first research question: What is the level of communication skills among trainees at ADTEC Batu Pahat?

The overall mean score obtained on the level of communication skills was 4.16 (Table 5). This indicates that the communication skills of the respondents are high. Item B3 on communicating in Malays language showed the highest mean score (M=4.48) indicating high level of communication skills in Malays language very well. Item B10 and B13 are rated moderately high with mean score is 4.19. This indicates that trainees think that their ability to make presentations in public is also good but not as good as speaking in Malay. The lowest mean score is obtained on item B2 (M=3.57) on ability to communicate in English. This indicates that trainees have moderate communication skills in English.

The second research question: What is the level of critical problem solving skills among trainees at ADTEC Batu Pahat?

The overall mean score obtained on critical problems solving skills was 4.15 (Table 5). This indicates that the level of critical problem solving skills among respondents as a whole is high. Item C12, C13 and C14 showed the highest mean score which is 4.24. The items are related to respondents' ability to persevere when dealing with problems and the ability to think

and use imagination to generate new ideas and solutions. Item C1 and C5 are also ranked high (M=4.15). These items are related to their ability to face any problem and the ability to judge things rationally. Interestingly, respondents rate C3 the lowest (M=3.93) an item assessing ability to analyse problems critically. This indicates that trainees lack the ability to analyse problems critically.

The third research question: What is the level of skills in teamwork among trainees at ADTEC Batu Pahat?

The overall mean score obtained is 4.28 (Table 5). The results showed that the level of teamwork skills among respondents as a whole is high. Item D7 shows the highest mean score of 4.41. This shows that the high calibre trainers work with other members well after undergoing training in ADTEC. Item D11 gains a mean score of 4.29. This shows the ability of trainers to work well in a team after training in ADTEC is still at a moderate level compared to other items contained within teamwork skills. However, this item is still indicative of a high level. Item D12 shows the mean scores lowest, which is 4.18. This indicates that trainees are relatively less confident to take on the role as head of the group to undergo various activities in ADTEC.

The fourth research question: What level of leadership skills among trainees at ADTEC Batu Pahat?

The overall mean score obtained is 4.27 (Table 5). The results show that the level of leadership skills among respondents as a whole is high. Item E12 shows the highest mean score of 4.43. The analysis shows that during the training, participants are open to feedback and making contributions. This is indeed very positive and is very good for the future of the trainees. Item E14 obtains a simple mean score of 4.27 demonstrating the ability to control emotion coach during coaching role which is still modest compared to other items. However, the estimated mean of this item remained at a high level. Meanwhile item E4 showed the lowest mean score of 4.17. This shows that trainees are still lacking in confidence to become a role model to the members of the group. This needs to be taken seriously even if the estimated mean shows that this item remained at a high level.

Table 5. Mean Score for Level of Soft Skills among Trainees

Aspects of Soft Skills	Total of Respondent (n)	Mean Score
Skills of Communication	200	4.16
Skills of problems Solving critically	200	4.15
Skills of Teamwork	200	4.28
Skills of Leadership	200	4.27
Overall Mean		4.22

Based on Table 5, the overall implementation of the soft skills respondents in ADTEC Batu Pahat were at a high level with mean score recorded was 4.22. Teamwork skills have the highest mean score compared to other soft skills elements while critical problem solving skills had the lowest mean scores compared to other soft skills that were examined in this study.

The fifth research question: Are there any significant differences of trainees soft skills level between different programmes?

Hypothesis testing on mean difference using ANOVA shows that the p-value is greater than .05 (Table 6). This indicates that there are no statistically significant differences in means between all groups. Therefore, the result is interpreted as there are no significant differences in the level of soft skills between trainees of four programmes.

Table 6 Results of ANOVA

		Sum of Squares	df	Mean Square	F	p
Soft Skills	Between groups (combined)	0.898	3	0.299	2.348	.074*
Groups	Within groups	24.985	196	0.127		
	Total	25.883	199			

* $p > .05$, not significant

4 DISCUSSION

Communication is a fundamental skill that consist a systematic and continuous process of transmitting information, ideas and attitudes (Joseph et. al, 2015). Detailed results of this study show trainees from ADTEC Batu Pahat able to communicate in Malay very well regardless of religion and culture, both spoken and written. Higher mean scores were also recorded for the items on good use of technology in presentation. This finding is laudable as it meets market place demand as shown in the study by Koo, Vincent and Fadhil (2009), in which they found that in the labour market, employers want workers who are able to make a good presentation among others. The analysis also registered a mean score that belong to the lowest class that is, on the ability to communicate in English well, the ability to write in English well and the ability to use English in presentation. Score mean acquired mostly at a moderate level. This clearly shows that the skills involved in speech and writing language of the world is still not fully achieved by the ADTEC trainees. This is in line with the statement by Abdul Latif (2005) who found that Malaysian students in general tend to have poorer spoken and written English compared to other elements of the communication skills. This opinion supported by Aziz (2000) where less capable students are able to write well and speak English fluently. Thus, weakness in English proficiency must be taken seriously by the ADTEC management team because communication in English is needed by employees in today's competitive work environment (Koo, Vincent and Fadhil, 2009).

The study shows that trainees at ADTEC are capable of mastering critical problem-solving skills, especially in the ability to think and imagine something in order to create something new. In addition, the level of patience to deal with problems and ability to make decisions to solve problems that is also among the items that record the highest mean score in this section. This is a good finding because it indicates that ADTEC trainees are prepared to deal with problem solving demand of the workplace where generic skills such as creative thinking, problem solving and analytical skills is necessary to meet the challenges faced in business

(Hassan, 2002; Othman & Amiruddin, 2010; Othman et al., 2011). Contrary to that, the lowest score that was recorded is the ability to analyse problems critically. This result indicates that the trainees of ADTEC are only at the stage of identifying problems and has not reached the level to solve the problem by thinking critically and efficiently. Having a low ability on this area will reduce the ability of graduates to compete in their career as to according to Roselina Shakir, (2009), trainees must possess the ability to identify and analyze complex situation as well as able to make evaluations that are justifiable. Abdul Hamid et al., (2004); Amiruddin & Othman, (2010) also concur with this view in which they reiterate the importance of this ability to creative thinking, problem solving and in everyday life.

The overall level of trainees' team work skills in the study also tend to be relatively high and comparable to other skills. This indicates that the respondents agree that they have enhanced their teamwork skills after undergoing a program of study at ADTEC. On this skill element, the item on the ability of respondents to cooperate with other members, has recorded the highest score. Most respondents strongly agreed on the cooperation between the abilities of other members is encouraged during the process of teaching and learning, in which the process that is mostly technical and procedural in nature also requires trainees to work in groups. Mohammad Razali (2008); Chen al., (2014) agrees that ADTEC trainees are trained with heavy emphasis on workshop tasks that demand good team working; hence the good team working skills. The lowest mean response reported is on taking on the role as head of group. Lower confidence in taking the role of head could be due to low self-esteem among students where they feel that they are not able to undertake the heavy responsibility of a group leader. This coincided with Sukarman (2012) study, which states that most students are afraid or unwilling to take on greater responsibilities in any given task as a leader and more comfortable to become a follower in the group.

The level of soft skills that contain leadership skills of trainees at the ADTEC, as a whole registered a high tendency. This indicates that development of leadership skills are well integrated in the teaching and learning at ADTEC. Furthermore, the highest mean on the item related to the ability of trainees to be open minded is a good indicator as the open nature is one of the important elements in fostering of a good leader. The open nature of leadership can produce an efficient communication system. This was in line with research by Chaffee (1997); which stated that openness to change, is one of the communication styles of leadership that can give meaning if it can be translated in the leadership of the organization. The lowest score was recorded for the item on the ability to give directions. Although the mean recorded was high but the authorities should seriously recognize the weakness of its trainees in the ability to provide instructions. This is because the ability to give directions confidently is important to be a good leader, as having confidence will enable a leader to build an organization that is able to produce the best work. In other words a leader must have must believe in their ability in order to lead well (Pua, 2014).

The ANOVA conducted on the overall means of soft skills indicate no significant difference between the soft skills of trainees undergoing different programmes. Trainees from the Welding Department, the Department of Computer Networks, the Electrical and Electronics Department and the Department of Mechanical Engineering and Production have similar levels of soft skills. These findings indicate that trainees from all departments have received similarly effective

training with respect to the development of soft skills, i.e., through the teaching and learning process and extra-curricular activities at ADTEC. The role of the instructors in promoting soft skills development is supported by Razaai and Zainal Abidin (2007), in which they asserted that any changes in a community (trainees community) can be traced to the behaviour of individuals (instructors), either directly or indirectly. As educators play major roles in enhancing students' soft skills, they need to be heavily involved in the implementation aspect and be creative in designing their teaching so as to incorporate the relevant skills (Shakir, 2009). To be truly authentic, Taylor (2016) recommends that students should be asked to work on real industry project with the real client in order to develop good soft skills.

5 CONCLUSION

The study set out to evaluate the effectiveness of the soft skills integration in ADTEC as a major player in producing skilled workforce for Malaysian industries. The findings indicate that the trainees are strongest in teamwork skills while weakest in critical problem solving skills. Their strength in teamwork skills can be attributable to the fact that trainees are constantly required to work in teams, either in executing projects or in curricular and extra-curricular activities during their course of study. The lower level of critical problem solving skills indicate the need for training institutes especially ADTEC to develop more effective strategies on trainings in solving problems so that trainees can hone their talents in critical thinking and logic as these skills are extremely important for producing graduates who are competitive and competent to face the career challenges of the future. It can be concluded that development of critical problem solving skills are in need of more emphasis in ADTEC and possibly in other TVET providers as well. The similar soft skills level across programmes seems to support the conclusion that TVET programmes are equally influential in promoting or hindering soft skills development.

The findings however must be viewed with caution as the study was based on self-report which is useful in providing a relative "feel" of the situation or phenomenon which in this case is soft skills. However, self-report may not be accurate in providing a true measure of the skills under study. Nonetheless, in light of the difficulty in assessing soft skills, self-report can be a useful tool in giving an idea on the phenomenon of interest; can be easily administered by a TVET teacher or an instructor before or after training. The knowledge gained from this study can be used by ADTEC training providers in particular as the basis for planning future trainings while TVET training providers in general can take note of the fact that it is feasible to integrate soft skills development efforts into existing TVET programmes despite the highly technical nature of these programmes.

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