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# An Improved Employability Skills Model and its Compliance Through Vocational Educational System in Bahrain

Rakesh Mishra, University of Huddersfield, West Yorkshire, UK  
Mohamed Alseddiqi, University of Huddersfield, West Yorkshire, UK  
Crinela Pislaru, University of Huddersfield, West Yorkshire, UK

*Abstract: The globalisation along with the interdependence of various economies has resulted in creating extra dimension to the employability skills requirements. Various socio-economic indicators have increased the pressure on vocational education sector and changed it from supply driven to demand driven by the labour market requirements to minimise the existing employability skills gap. The paper presents a study that has been conducted to identify the existing skills gap between School Based Learning (SBL) and Work Based Learning (WBL) in Technical and Vocational Education (TVE) System in Bahrain by asking teachers, Human Resources departments from industry, and industrial supervisors to complete questionnaires. Their answers have been analysed quantitatively and qualitatively. Based on these drawn conclusions, an improved employability skills model has been developed which shows the importance of the required skills. This model will be the basis for suggested modifications in SBL and WBL structure in TVE in Bahrain.*

Keywords: School Based Learning (SBL), Work Based Learning (WBL), Technical and Vocational Education (TVE), Employability, Skills, Cognitive, Affective, Psychomotor

## Introduction

**T**HE OBJECTIVE OF technical and vocational education system (TVE) is to equip Bahraini graduates with employability skills required for various industries such as petroleum industry, electronic and telecommunication engineering, building services, mechanical engineering, and computer technology. This objective is achieved through a two tier system of education (TVE Directory, 2004) which includes school-based learning (SBL) and work-based learning (WBL).

SBL comprises of specialised technical modules (for industry specific skills) and supportive modules (for generic employability skills) (TVE Directory, 2006). The WBL is intended to equip the graduates with skills in the cognitive, affective and psychomotor learning domains required for their successful future careers.

In the second author's experience as a teacher for two years in the field of electronic and telecommunication engineering at TVE in Bahrain it was noticed that there was a lack of structured curriculum review process that contributed to the reduced effectiveness of linkage between the industrial requirements and the provisions of the teaching and learning processes. Furthermore the researcher (second author) worked as educational specialist in TVE for about six years which included being the project adviser for the initiative of Bahraini Ministry of Education improvement project. In this capacity he worked towards the improvement of

TVE in the Kingdom of Bahrain during the period Dec 2005 to Sept 2008. The project objectives were, offering new secondary vocational education specialisations, establishing a polytechnic, setting policy and standards for vocational education and training and investing in teachers' development. During the implementation stage of this project, the researcher noticed that enormous skills gap exists between the industrial requirements and the skills of the pass-out students. The researcher noticed that no effective plans were in place to close/minimise this gap. It prompted researcher to carry out an in-depth study on employability skills requirements and development of an improved employability skills model.

Various works on classifications of employability skills available in literature have been reviewed for the purpose of this paper. The research outcomes have been quantified by carrying out a survey through a well designed questionnaire to test the skills levels in cognitive, affective, and psychomotor domains. This paper has highlighted the findings obtained through the questionnaire completed by three stake-holders in the system: teachers, industrial supervisors, and specialists from Human Resources departments from the industry. The questionnaires were designed to specifically identify the skills requirements by the labour market as well as skills on offer from the students. The questionnaires findings have been analysed in depth to develop an effective employability skills model. Also, conclusions and recommendations for further improvement in this area have been included.

### **Existing Employability Skills Models**

Various works on classifications of employability skills are available in literature and only the related ones were reviewed. For example, Hamilton and Hamilton (1997) found that employers prefer technical, social and personal competencies. Kearns (2001) believed that employers' requirements are skills relevant to their attitude and knowledge such as work readiness skills, interpersonal skills, creativity skills, and thinking skills. Gibb (2004) mentioned that the employability skills are also known as '*core skills, key skills, essential skills, basic skills and workplace know-how*'. Curtin (2004) developed a framework of soft skills containing '*the employability skills of the future*' that included communication, team working, problem solving, enterprise, planning and organising, self-management, and technology skills. Moreover, Dacre and Sewel (2007) defined employability skills as the '*degree subject knowledge, understanding and skills, generic skills, emotional intelligence, career development learning, experience from work and life, reflection and evaluation, and self-esteem, self-confidence, and self-efficacy*'.

Employability skills publications outlined limitations in their usefulness for modern corporate environment. The corporate companies have technology oriented jobs requiring highly skilled workforce with intercultural awareness and global perspectives in a cross-cultural capability context. Wangsa (2007) indicated that it was obvious that the existing employability skills models needed improvement to satisfy industrial requirements. Extensive review of literatures has indicated that the employability skills components varied from one model to another. However, all these skills could be categorised using the Bloom's taxonomy framework (Anderson and Krathwohl, 2001) for different skills dimensions using the three domains of blooms; cognitive, affective, and psychomotor domains.

The objective of this paper is to improve an employability skills model that could support industrial requirements. This would then help in designing/modifying teaching and learning

provisions in TVE schools, help in meeting employers' requirements, and optimise the outcomes from the whole learning processes including SBL, WBL, and SBL-WBL transition.

## Methodology

The emphasis of this section is to show the approach that has been used for data collection aimed to develop an improved employability skills model. The data collected are from a pilot study on a group of TVE students.

In this study, a questionnaire was designed to elicit the responses from three stake holders in the system: teachers, specialists from human resources departments from industry, and industrial supervisors. (*Refer to appendix 1 for the questionnaire*) The questionnaire is made of three distinct parts:

- Part 1 contained 5 questions on personal details. The questions were on respondents' gender, age, years of experience, and the employment title within the department of the organisation. This section has given data on the sample characteristics that included demographics (age and gender) of people involved in TVE system and industrial companies.
- Part 2 of the questionnaire was designed with a 5-point Likert Response Scale (Cooper and Schindler, 2006) to test the employability skills competencies through the Bloom's Taxonomy by assessing the effectiveness in its three dimensions namely; cognitive, affective, and psychomotor (Anderson and Krathwohl, 2001). There were 43 questions that have been carefully selected to test skills requirements in a variety of conditions. It has been ensured through the design of the questionnaire that the responses would enable a critical analysis of the skills required and their relative importance. Moreover, the questions were formulated to cover all the learning levels of Bloom's dimensions. To bring out more depth into the analysis and to propose an effective employability skills model for Bahraini market's specific needs, the components (elements) of employability skills on offer (existing employability skills models) as well as the skills required (from the questionnaire's results) have been enumerated and a number of employability skills components were introduced and sub-divided into the three dimensions of Blooms. Care has been taken to avoid overlap of skills. Table 1 (*see appendix 2*) shows the learning levels of the three Bloom's dimensions as Bloom's Taxonomy has been considered as a flexible learning framework that could be adapted in order to achieve the desired learning outcomes. The table also indicated the suggested components of employability skills which some examples of their indicators.
- Part 3 included an open ended question. The purpose of this part was to cover any area that was not included in the earlier sections. It also allowed the respondents' to put their comments and express other issues.

The questionnaire was distributed to the different stake-holders as per the details given below:

1. *Teachers*: there were 35 respondents from teachers who have given their opinions on measuring students' learning levels according to cognitive, affective and psychomotor dimensions. The respondents included teachers who deliver theoretical and practical modules during SBL and teachers who mentor and monitor students during their WBL

programmes. This part of the investigation was carried out to evaluate and compare the knowledge, attitude, and skills developed by SBL.

2. *Human resources departments from industry:* 15 respondents from human resources departments have been used to indicate the skills level required in industry from students. This part of investigation enabled formulation of the required competencies during the WBL as well as future expectations from TVE students.
3. *Industrial supervisors:* A sample size of 15 industrial supervisors has been used to determine the skills, level of attitudes and knowledge that the students displayed during WBL. The questionnaire was designed to bring out clearly the students' skills in relation to the three dimensions from SBL and to estimate the skills that were generated through WBL.

The questionnaire was designed in such a way that it would engage the respondents' interest, encourage co-operation and extract reliable and accurate data. This was done by preparing a draft of the questionnaire, informal testing of the draft questionnaire, revising it, pre-testing, and finalising the questionnaire parts and contents. The questionnaire was reviewed by the research supervisory team and TVE specialists.

## Findings

The data of the questionnaire was analysed with the help of the Statistical Package for the Social Sciences (SPSS) version 15. The analyses have been done by quantifying the frequency distributions and determining the most average response.

Part one of the questionnaire indicated that there were 65 respondents in total which varied in terms of demographics such as gender and age as shown below. This allowed for unbiased sample population to be collected and analysed with nominal chance for error among the overall results.

- *Gender:* the majority of respondents were male (65%). Engineering industrial sector is still a male bastion in Bahrain. (TVE Directory, 2006) In addition, most of the female respondents were from human resources departments (35%).
- *Age:* 40% of respondents were aged 21-29, 46% were aged 30-39, 10% were aged 40-49, and only 4% were aged 50-59. This shows that most of the respondents were in the age bracket of 21-39.

Figure 1 compares between the three respondents in terms of the cognitive domain questions. The specialists from human resources indicated that students should improve their abilities in understanding and performing well in problem solving activities and introducing new ideas in implementing practical tasks during SBL and WBL. Also, respondents agreed that the level of IT skills required by the industry is higher than what TVE students have performed during SBL and WBL.

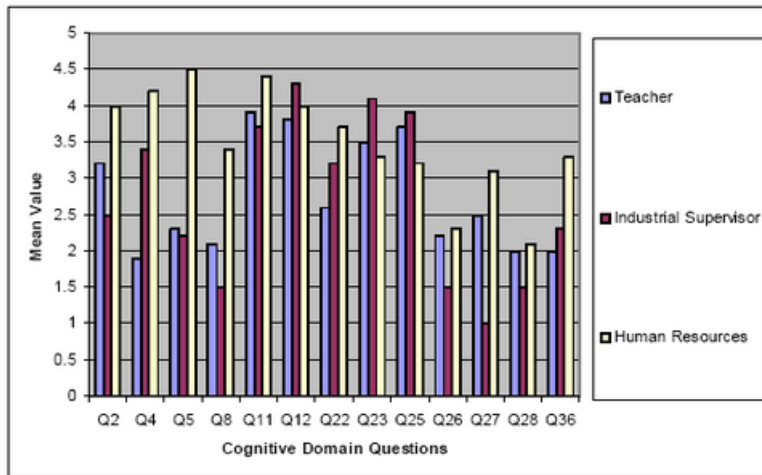


Figure 1: Comparison of Respondents' Evaluation to Cognitive Domain Questions

Teachers and human resources have equilibrated views towards understanding company organisational structure, solving conflicts, and formulating effective decisions in certain tasks by TVE students. However, the three respondents believed that TVE students were fully aware of health and safety standards as well as industrial companies' roles and regulations.

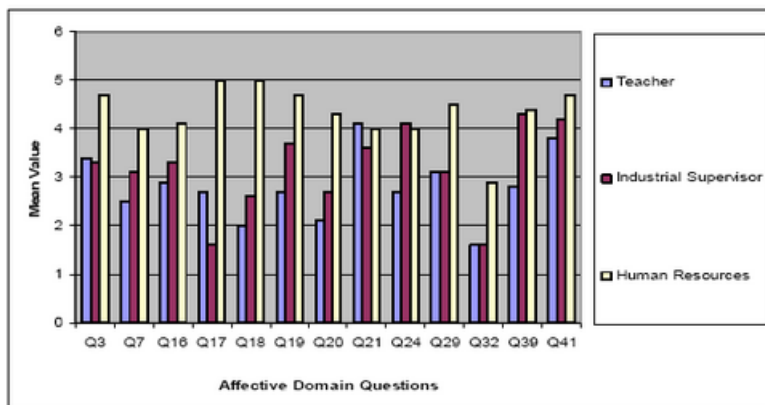


Figure 2: Comparison of Respondents' Evaluation to Affective Domain Questions

Figure 2 indicates that the respondents from human resources concentrated on improving students' effectiveness in work participations, commitment in continue improvements, and having positive attitude to change. However, the three profiles of respondents agreed that TVE students react in positive manner with others during SBL and WBL, respecting others ideas and maintaining good rapport with teachers and industrial supervisors.



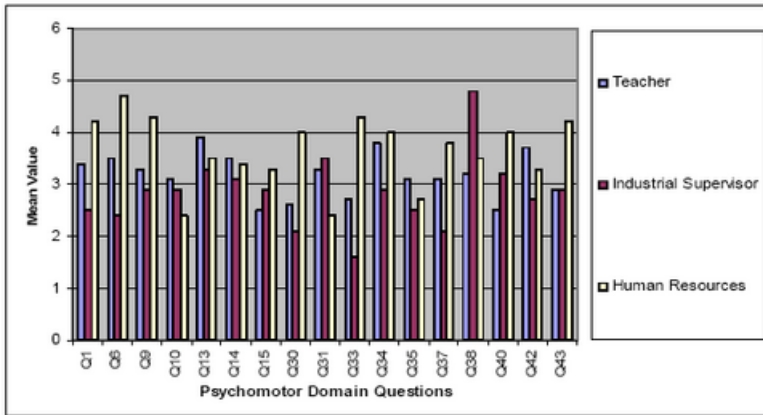


Figure 3: Comparison of Respondents' Evaluation to Psychomotor Domain Questions

Figure 3 indicates the responses to the questions that are related to the psychomotor domain. Industrial supervisors' respondents have signified that TVE students have improved their abilities in terms of communication skills, and thinking skills during practical activities in WBL. However, human resources believed that there was a need to improve TVE students' soft skills and practical skills standards during SBL in order to perform well during WBL and meet the industrial expectations.

Figure 4 represents a summary of respondents' point of view about skills requirements in the three dimensions; cognitive, psychomotor and affective. Following observations can be made from figure 4.

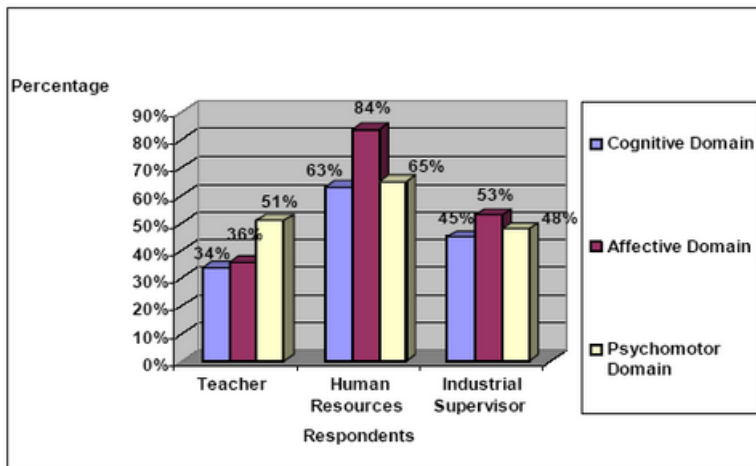


Figure 4: Comparison of Respondents' Evaluation

- Teachers' value skills in the psychomotor dimension most because generally all teachers have to impart specific hands on skills to students. With the increased number of manu-

facturing, constructing and services sector the need for specific skills has increased (Tamkeen, 2008). Teachers' average response indicates this trend.

- Human Resources people from industry value the affective skill dimension most. This was noticed through the response to questions using following action verbs: receive, respond, understand and act, organise, and adopt (Anderson and Krathwohl, 2001). These verbs indicate affective domain related questions.
- Industrial supervisors have equilibrated views towards the three mentioned dimensions. They believe that the students should have cognitive proficiencies, show their ability to behave positively, and perform well in technical and specific skills required by the industry. Indeed, they believe that the share of various attributes including career development, work environment, technical skills and organisational culture are important to attract employers towards students and TVE graduates (Tamkeen, 2008).

Part three of the questionnaire has been included to elicit responses on the issues that could not be addressed by respondents in the earlier sections of questionnaire. The respondents have raised a number of valuable issues. These issues have been categorised in the followings:

- **The skills level within WBL and SBL programme** - Some teachers and industrial supervisors stated that the students' ability to understand various competencies and apply it into practice during WBL is questionable. In addition, the specialists from human resources stated that there was a significant skills gap between the level at which students performed during SBL and WBL and the level required by the industry.
- **Students' attitude in WBL** - Some respondents agreed that students' attitude (affective dimension) have been slightly improved by WBL education. They believed that WBL provides corporate environment to students which would improve their self-efficacy, positive attitude to change, self-esteem, self-confidence, and motivation.
- **Size of skills gap** - Respondents underlined that the employability skills gap might increase due to the instabilities and rapid changes in global economy so the rate of their business growth would slow down more rapidly. Therefore, the need to produce the right skills becomes a must for sustaining the businesses.

To conclude, there is a perceptible skills gap between students and industry requirements. In total, respondents agreed that industries in Bahrain are facing a number of challenges such as the deficiency in students' knowledge, attitude, and skills. This is due to problems in transferring right skills through technical and vocational education system and the private sector and incapability to communicate and perform professionally.

### **The Proposed Employability Skills Model**

The reviewed literature has included various publications on employability skills models. The literature has also showed that TVE systems are facing a number of challenges linked to the delivery of appropriate set of skills during SBL and WBL.

To bring out more depth into the analysis, the employability skills could be sub-divided into three categories. These are academic and technical skills, supportive skills and specific job related skills.

Figure 5 shows respondents' views with respect to various components of employability skills as mentioned above. Teachers' respondents indicated the positive response on how well the skills were taught during SBL. Other respondents; industrial supervisors and human resources gave their positive response towards the most important and required skills from students. The main observations are listed as below.

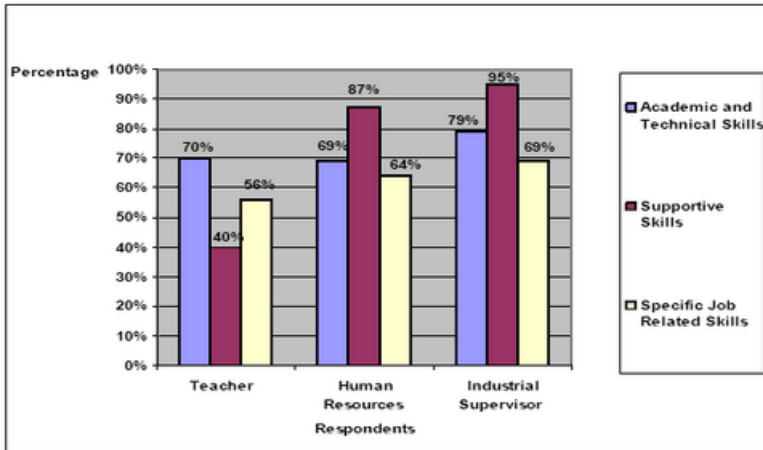


Figure 5: Comparison of Respondents' Evaluation with Respect to Various Employability Skills Components

- Teachers' respondents agree that basic skills which include listening, reading, writing, basic mechanical, electrical, electronic, and IT skills, operating different equipment and machines, and applying knowledge into practice are taught well during SBL. TVE curriculum concentrates on academic and technical competencies. (TVE Directory, 2006) Therefore, modules in TVE system include practical and theoretical discussions concentrated on practical skills, job related skills rather than social competencies, emotional intelligence and career planning and development.
- Specifically, human resources from industry indicate that they are inclined to employ students who are technically competent with good work ethics/attitude and commitment to remaining on the same job for reasonable period of time.
- Industrial supervisors' respondents signify that the work ethics are valued highly by the industry. They prefer students with strong academic and technical skills, and prefer students with specific job related skills including cognitive and workplace proficiencies.

The respondents from human resources have confirmed that employability skills should be divided into the three mentioned categories: supportive skills, academic and technical skills, and specific job related skills. Also, they have added that the categories should be involved into three critical zones namely: the most critical zone, the critical zone, and the least critical zone. The purpose is to distinguish between the skills (sub-categories) that should be delivered in SBL, WBL, and in both SBL and WBL. Also, the sub-categories were ranked based on the questionnaire findings. The following figures give more clarifications on the critical zones and their sub-categories.

a. The most critical zone: The most critical zone contains the sub-categories of supportive skills required by the specialists from human resources. This zone contains the skills that TVE students should learn during SBL and WBL. The human resources believed that this category and its sub-categories should be given more priority as it links between SBL and WBL. It also contains the skills required most by the modern industry.

Figure 6 shows the social competencies that are mostly delivered in SBL. Cultural awareness and cognitive proficiencies have equilibrated positive responses from teachers. On the other hand, teachers agreed that emotional intelligence and career planning and development are not delivered properly in SBL. Industrial supervisors have given their views on how well these supportive skills are delivered during WBL. The industrial supervisors have indicated that TVE students performed well in communicating with employees from different cultures, participating with others and keen in career planning and development during WBL. They clarified that, TVE students usually communicated with supervisors and other employees and discussed the opportunities of future employments and market requirements. According to human resources' respondents, the requirements of the labour market are different than what students performed in SBL and WBL. Therefore, the supportive skills were categorised from the most important skills to the least important skills according to the positive responses of human resources: cultural awareness, emotional intelligence, social competencies, career planning and development, and cognitive proficiency. As the Bahraini labour market has local, national, and international industrial companies, the human resources believed that knowing others cultures, communicate with employees and understand their personal views, values, and behaviours would enable employees to have positive attitude in the workplace.

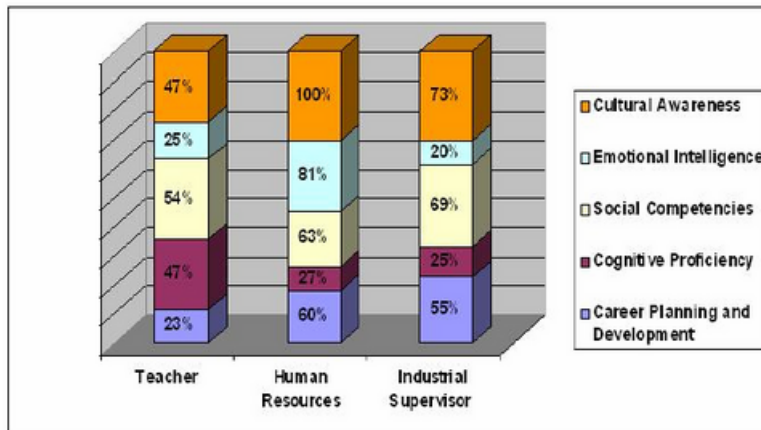


Figure 6: The Average of the Positive Response in Supportive Skills

b. The critical zone – The human resources respondents believed that category contains the academic and technical skills that were delivered to students during SBL. These skills give the basic competencies for TVE students as they should gain before they go to the WBL programme.

Figure 7 includes academic skills and technical skills. Teachers indicated that teaching and learning process in SBL concentrated more on technical skills rather than soft skills. Industrial supervisors underlined that TVE students showed almost the same level of skills including both technical skills and soft skills in WBL. Human resources preferred capable TVE students in both soft skills and technical skills. Also, the figure showed the required skills level by the industry is 81% which almost double the TVE students' performance during SBL.

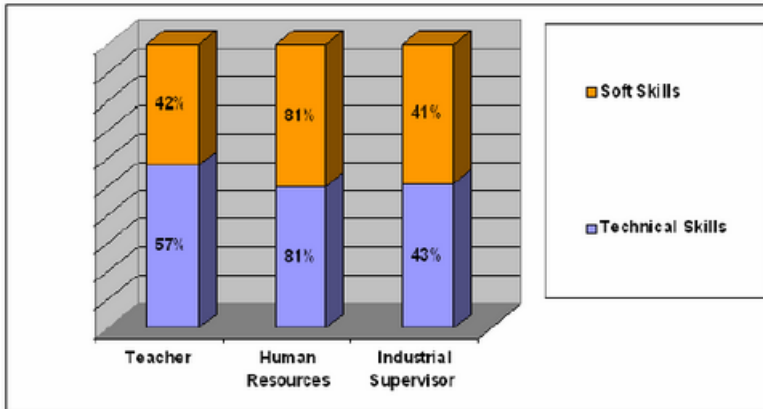


Figure 7: The Average of the Positive Response in Academic and Technical Skills

c. The least critical zone – This zone contains the skills that students learn during WBL. The human resources respondents consider this zone as the least critical zone. The reason is that this category is totally relied on students' level of competencies gained from the academic and technical skills.

Figure 8 shows the specific job related skills – teachers believed that practical modules including technical projects during SBL were concentrated on specific technical skills rather than workplace proficiencies. Industrial supervisors underlined that TVE students performed more than the required in workplace proficiencies, they were motivated to work during WBL. However, their level of specific technical skills was almost the same what they performed during SBL. The human resources respondents showed that students performed with the range of market requirements in specific job related skills.

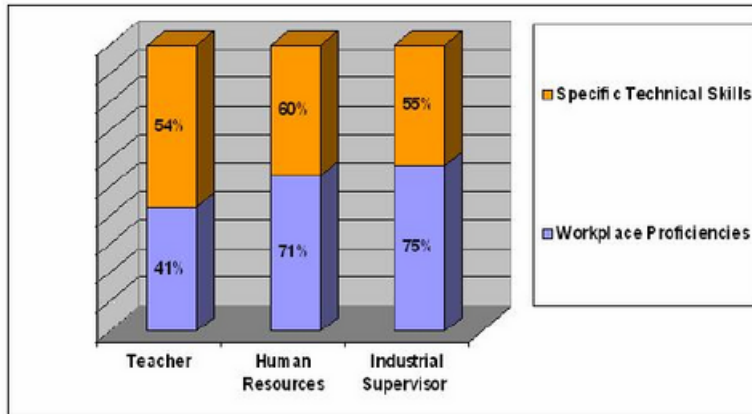


Figure 8: The Average of the Positive Response in Specific Job Related Skills

Based on the above explanations, an improved employability skills model has been generated that includes the three above mentioned zones. It is also specifically designed to fit the needs of the Bahraini labour market.

Figure 9 shows the pictorial representation of employability skills model. This model uniquely divides required skills into three categories namely, supportive skills, academic and technical skills, and specific job related skills. The specialists from human resources departments from industry agreed that employability is ‘a mix of skills, attitudes, and behaviours.’

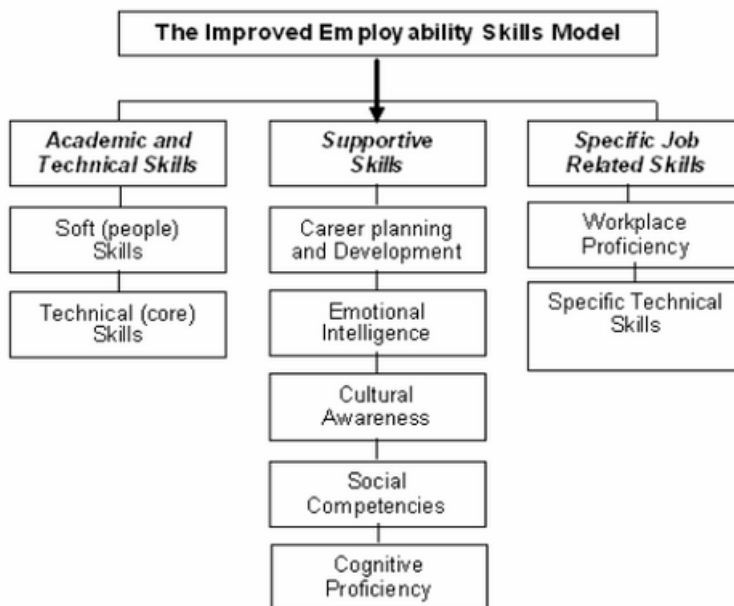


Figure 9: The Improved Employability Skills Model for TVE System in Bahrain

Various skills categories and sub-categories have been explained in more details below.

## **Supportive Skills for SBL and WBL**

These skills are the most critical skills that are highly recommended by the industry in Bahrain. It mainly includes proficiencies that are related to work, knowledge and attitude as shown below:

### ***Career Planning and Development***

Greenbank and Hepworth (2008) found that most of students are not involved in the process on career decisions during their study in SBL and WBL. Also, most of them had no idea about the rapid change in global economy. Therefore, the employability skills model contains career planning and development component that should improve students' ability to write their C.Vs, letters for job application, and preparation for interviews.

### ***Emotional Intelligence***

The model includes the emotional intelligence component as well. Dacre and Sewel (2007) underlined that emotional intelligence could improve personal qualities, help in intellectual growth of students, feeling recognition. Through this students can motivate themselves, and manage emotions in relationships with others. Also, the analysis of questionnaire highlighted that emotional intelligence was required by the private sector as a future needs from TVE graduates.

### ***Cultural Awareness***

Quappe and Cantatore (2007) defined cultural awareness as being prepared to understand others' behaviour and to react in a positive manner to cross-cultural differences. Therefore, students should become more culturally aware and be able to make a better contribution during WBL programmes. This also should help TVE students to understand others behaves, values, and believes.

### ***Social Competencies***

Hamilton and Hamilton (1997) defined social competencies as those skills that are relevant to workplace system such as learning about organisational systems. This included proficiencies related to industries' missions and visions, organisational structure, communication channels approved among people, people role in organisation, obligation to clients and customers, and how to gain access to information. The human resources underlined that social competencies should be taught to TVE students in SBL in order to be seen in reality during WBL programmes.

### ***Cognitive Proficiency***

The model contains the cognitive proficiency to develop students' knowledge, problem solving, and their positive attitude to change. Guilfooy and Wong (2002) added that students

should also improve their thinking skills in order to be more creative and productive during SBL (practical modules) and WBL.

### **Academic and Technical Skills**

This is where students demonstrate basic proficiencies during theoretical modules and convert it into applicative proficiencies during practical modules in SBL:

#### ***Soft (People) Skills***

These skills are the basic proficiencies which are required for high job performance (Robinson, 2000). Gaining soft skills helped TVE students to develop their listening, reading, writing, numeracy, ICT skills, and generic communication skills (engage in dialogue, give feedback, work as a team member, and understand how to solve problems).

#### ***Technical (Core) Skills***

Here, TVE students converted their knowledge into practice including specific vocational training, language skills, and mathematics. The students should know about the machine operation, computer applications, safety standards, device utilisation, etc. These skills were generally easy to observe, measure, and quantify during SBL. The students should show high level of proficiency in specific technical skills during WBL programme in order to increase the possibility of employment in the future.

### **Specific job Related Skills**

These skills relate to students' skills used in analysing practical situations using their previous knowledge from SBL, in gaining specific industry skills, and producing high quality work during WBL:

#### ***Workplace Proficiency***

This skill refers to the ability to use the available technology in WBL, management planning, evaluation of various practical tasks, and forecasting skills requirements in real work environment.

#### ***Specific Technical Skills***

These skills concentrate on TVE students' ability to be productive, and capacity to add value to work, and suggest for new practical approaches for future improvement.

The improved employability skills model has indicated the integration and implementation of the sub-categories which need to be provided by the SBL and WBL curriculum. This will enable to minimise the gap between skills provided and skills required in Bahrain labour market.



## Conclusions

Various employability skills models were reviewed and analysed critically for their usefulness in modern corporate work environment. A questionnaire was designed to test the requirements and achievements of skills in cognitive, affective, and psychomotor domains. Based on the analysis of the data it was seen that industrial skills requirements were not fulfilled by the TVE students coming out of SBL and WBL system. An improved employability skills model has been developed which shows the required employability skills that need to be developed through the improved teaching and learning processes in SBL and WBL. This model will be the basis for structuring the content of SBL curriculum in order to meet the visible needs of TVE system and the labour market. An attempt will also be made to address as many invisible needs as possible through the developed curriculum content. The TVE students will study new structured SBL curriculum before they will go for the work placement in industry.

The authors aimed to develop a generic employability skills model applicable to diverse range of TVE systems around the world. The data however was limited in this study and hence this study is specific to a pilot study for TVE in Bahrain.

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## Appendices

### Appendix one – The Questionnaire

#### Thank you for Taking the Time to Complete the Following Survey Part One – Personal Details

1	Gender	Male	Female		
		<input type="checkbox"/>	<input type="checkbox"/>		
2	Your age	21-29	30-39	40-49	50-59
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	How many years have you been working?				
	1-4	5-10	11-20		20+
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
4	Please name your department/division _____				
5	Please tick to indicate your employment title:				
	Industrial Follow-up Teacher	<input type="checkbox"/>			
	Senior Teacher	<input type="checkbox"/>			
	Taught Modules Teacher	<input type="checkbox"/>			
	Other	<input type="checkbox"/> please specify _____			

Part Two – Below is a list of statements for different skills. Please, indicate how much do you agree or disagree with those statements regarding students’ abilities towards those skills/elements. Your answer should reflect your first opinion

1- Strongly agree, 2- Agree , 3- Neither agree nor disagree,4- Disagree, 5- Strongly disagree

No	Statement	Strongly agree	Agree	Neither agree nor disagree	Dis-agree	Strongly dis-agree
1	Students are able to represent written materials for various tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Students are able to understand how to solve problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Students are able to listen and share ideas with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Students are able to coordinate with others effectively in practical tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Students are able to apply Information Technology into practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Students are able to implement practical tasks individually	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Students are able to participate actively in group's discussion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Students are able to apply knowledge of mathematics into practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Students are able to demonstrate practical tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Students are able to apply related knowledge into practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Students are able to use general computer applications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Students follow safety standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Students are able to operate machines related to his/her work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14	Familiarity about how to use devices relevant to given tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Students are able to plan personal future career	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Students are able to participate with motivation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Students are able to exhibit self-confidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Students are committed to continuous improvement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Students are able to communicate with people from other cultures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Students are able to understand others behaviours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Students are able to react in positive manner with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Students are able to describe practical terms and tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Students are able to understand company organisational structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	Students are able to use communication channels effectively	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	Students are able to understand industry rules and regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Students are able to solve conflicts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	Students are able to perform well to solve problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	Students are able to formulate effective decisions in certain tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	Students are having positive attitude to change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	Students are able to generate new ideas during practical tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

31	Students are able to complete practical tasks on time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	Students are able to appraise personal views	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	Students are able to demonstrate appropriate procedures in carrying out practical tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	Students are able to use available and new technology in implementing practical tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	Students are able to relate theoretical and practical tasks to each other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	Students are able to propose innovative ideas for certain tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37	Students are able to follow technical instructions during practical tasks effectively	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38	Students are able to communicate well with other students during practical tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39	Maintaining good rapport with supervisors/teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40	Improving thinking skills of students during practical tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41	Respecting others participations in work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42	Students are able to identify the acquired theories during WBL to technical issues such as learning about products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43	Developing students' interpersonal skills towards increasing employment opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part Three - Do you have any information or comments that you think will be useful for the research?

---

Appendix Two –

Competence	Cognitive Dimension					Affective Dimension					Psychomotor Dimension						
	Knowledge	Understanding	Application	Analysis	Synthesis	Evaluation	Attitude	Emotion	Values	Self-concept	Interpersonal	Teamwork	Quality	Productivity	Problem-solving	Communication	Leadership
<b>Problem Solving</b>																	
Identify the problem																	
Define the problem																	
Generate possible solutions																	
Evaluate the solutions																	
Implement the solution																	
Review the solution																	
<b>Teamwork</b>																	
Identify team members																	
Define team roles																	
Establish team norms																	
Monitor team performance																	
Provide feedback																	
Resolve conflicts																	
Encourage team cohesion																	
<b>Communication</b>																	
Identify communication needs																	
Develop communication strategies																	
Implement communication strategies																	
Evaluate communication effectiveness																	
<b>Quality Management</b>																	
Identify quality requirements																	
Develop quality management systems																	
Implement quality management systems																	
Evaluate quality management system performance																	
<b>Leadership</b>																	
Identify leadership opportunities																	
Develop leadership strategies																	
Implement leadership strategies																	
Evaluate leadership effectiveness																	

Table 1: The Details of Part 2 Questions of the Questionnaire

**About the Authors**

*Dr. Rakesh Mishra*

Dr. Rakesh Mishra Course Leader MSc (Automotive System Design and Analysis) and MSc (Mechanical Engineering Design) in Department of Engineering and Technology School of Computing and Engineering University of Huddersfield, U.K.

*Mohamed Alseddiqi*

University of Huddersfield, UK

*Dr. Crinela Pislaru*

University of Huddersfield, UK



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**Helen Smith**, RMIT University, Melbourne, Australia.

**Richard Sohmer**, Clark University, Worcester, USA.

**Brian Street**, University of London, London, UK.

**Giorgos Tsiakalos**, Aristotle University of Thessaloniki, Thessaloniki, Greece.

**Salim Vally**, University of Witwatersrand, Johannesburg, South Africa

**Gella Varnava-Skoura**, National and Kapodistrian University of Athens, Greece.

**Cecile Walden**, Sam Sharpe Teachers College, Montego Bay, Jamaica.

**Nicola Yelland**, Victoria University, Melbourne, Australia.

**Wang Yingjie**, Beijing Normal University, Beijing, China.

**Zhou Zuoyu**, Beijing Normal University, Beijing, China.



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