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Do Soft Skills matter? A Study on Employability of Engineering Graduates in Bangladesh

ABSTRACT

Objective: University graduates in Bangladesh are presently confronted with high job competition. Because of less job availability, engineering graduates are facing more challenges in getting job opportunities than business graduates. Moreover, engineering graduates are more

proficient in technical skills than with their human skills. The most important barrier for engineering graduates' employability at their initial stage of career is that they have less focus on acquisition of their soft skills. Therefore, this study is concentrating to analyse the current situation of the engineering graduates' soft skills deficiency and to investigate the impact of having soft skills on employability.

Methodology: The nature of the study is qualitative and data has been gathered through in-depth interview and Focus Group Discussion (FGD). Respondents of in-depth interview are experienced engineers and HR experts who are working in engineering based organizations especially at the power solution service providing companies in Bangladesh. FGD among final year undergraduate engineering students has also been conducted to validate the interview data. Thematic analysis is used to analyse the qualitative data.

Findings: The impact of having soft skills in getting employment of new graduates at the entry level is identified in this paper.

Value Added: Higher education can assist in developing employability through increasing employment prospect and also achieving individual learning goals. However, fresh engineering graduates have social skills gap and lack of practical knowledge which can be reduced through acquiring soft skills. Different techniques such as self-training, institutional training, joining language sessions, attending presentation skills development classes and social programs can assist graduates in the acquisition of soft skills.

Recommendations: As the most important reason of engineers' unemployment is the lacking of collaboration between industry and academic institutions, this study focuses to draw the attention of engineering students, educational institutes and policy makers to highlight the importance of developing soft skills for employability and career growth.

Key words: Engineering Graduates, Soft Skills, Employability and Bangladesh

JEL codes: A23, J24, E24

Introduction

Graduates need to acquire adequate soft skills like communication, critical thinking, problem solving, team work, leadership, entrepreneurship skills in addition to academic knowledge (Richard, 2012). This skill is basically expected by the employers. Lack of soft skills reduces the chance of employability for

newly graduates. Soft skills are important just like other qualifications. Lack of soft skills is now a global problem among the graduates (Clarke, 2016). Employees who have both hard skills and soft skills can be successful in their profession. Now the recruiter's slogan is like "recruit for attitude and train for skills" (Rao, 2014). Deficit in soft skills reduced productivity. Soft skills like communication and team work are more important than traditional academic results (Clarke, 2016). Employers nowadays prefer positive attributes and soft skills from the job candidates than academic excellence and technical skills. From employer's perspective, employability refers work readiness like required skills, knowledge, attitudes and commercial understanding that increase the employees' productivity. The reasons of unemployment among graduates are not because of their unintelligence but because of their lack of soft skills (Omar, Manaf, Rusyda, Kassim, & Aziz, 2012).

The main reason for unemployment and low level of employability among engineer's graduates in Bangladesh is the lack of soft skills. Employability does not mean only to get a job. It means developing attributes, techniques or experience for getting a job and also to be successful in the jobs. Present education system for engineers in Bangladesh must be related with the expectations of the employers that are necessary for enhancing their employability.

Therefore, the purposes of this study are as follows: identifying the present condition of soft skills gap among the engineering graduates, and examining the impact of soft skills on their employability.

Literature review

Employability and its importance

Employability skills help graduates to engage in a job quickly. Employability is termed as a combination of varied workplace related knowledge, abilities and personal traits (Keller et al., 2011; Yorke, 2008) that enables graduates to get employment opportunity and gain efficacy in selecting jobs which

also proved as beneficial for the society and the community (Yorke, 2008). Both technical skills and soft skills are considered as employability skills which make individuals ready to get a job (Ju et al., 2012; Omar et al., 2012; Robles, 2012; Shafie & Nayan, 2010). However, employability does not mean only to get a job, rather it focuses on continuous learning, increasing critical thinking abilities, emerging traits and acquiring experiences to growth and gain empowerment in the present job (Harvey, 2003). Employability means the ability to attract employers during interview for getting an employment opportunity immediately after completion of academic degrees. Fresher should possess a certain level of non-technical skills along with the technical skills to increase the chance of getting a job in the relevant field as well as to sustain in that job for career progression.

Students from different academic background are striving to get a job in their relevant areas. Many of students may not get a job instantly after completing their studies for their lacking in some set of skills. In a study of World Bank in India, the findings indicated that engineering graduates have the prevalent skill gap between complex intellectual skills (rational, mathematical and problem solving capability) and simple intellectual skills such as communication and critical thinking (Andreas & Hiroshi, 2011). Due to global competition in the labor market, engineering graduates are facing difficulties to get a job and falling in aggressive competition. To be competent and forceful in the job market, engineering students should attain a set of soft skills for increasing the employability skill (Azami et al., 2009). Employers always seek a certain set of employment qualities like problem solving, strong work ethic and decision making skills during job interview (Green et al., 2011). However, employers face a challenge to recognize the potential employee who has the competency in both technical and soft skills (Shafie & Nayan, 2010). Graduates must understand the recruiters' demanding issues to prepare themselves as proficient candidates for getting employment in the desired working place.

Organizations' expectation about employability

Employers assume that employability is the graduates' readiness to work with having certain set of skills, awareness, attributes and commercial knowledge which assist them to be more productive in the organization immediately after getting a job (Mason et al., 2009). A maximum number of employers are demanding an assortment of different skills like technical competencies, interpersonal, critical thinking, leadership and managerial capabilities reinforced by the educational system from their employees (Brown & Bowen, 2009). Currently, employers are giving more emphasize on higher level skills of employability and adjustability with industrial prompt changes along with technical expertise to locate proper employees in the working place (Sattar et al., 2012; Buntatet al., 2013; Fong et al., 2014). In addition to that, employers are giving less importance on educational brilliance and technical expertise as they think these could be increased by giving training if applicants have noticeable personal traits and soft skills (Winterbotham et al., 2001). During recruitment and selection activities, employers can assess the shortcomings of candidates' soft skills as per their expressions, aptitude, communication and distinct talent by noticing outfit, looks, motivation, dialogue, self-confidence, gesture, behavior and knowledge level (Devins & Hogarth, 2005; Taylor, 2005). Organizations expect that candidates must show a certain level of soft skills exercise during employment tests to prove them as more competent than others which ultimately help them to get the job in a quicker manner.

Role of soft skills in employability

The ability to get employment will be higher if an individual has both required technical skills and certain level of soft skills. Soft skills are the substitute term of non-technical skills which includes communication, personal and social skills and these are required to perform in the working environment along with the technical skills (Weber et al., 2010). Human ability to communicate, work

in a team, lead a group of people, manage conflict, negotiate, be professional and ethical are classified as soft skill (Azim, et al., 2010). Being intangible and personality based skills, soft skills enable people to determine their suitability in leadership, facilitation, meditation and negotiation activities (Robles, 2012). Soft skills comprise a set of personal attributes, traits and behaviors which ascertain several capabilities of applicants like strong commitment to the work, teamwork, communication, customer service, leadership and problem solving for upholding the better position than peers in the working environment (Deepa & Seth, 2013). Creativity, interpersonal, information communication technology, problem solving, managerial ability, advance thinking, teamwork and adaptation skills are needed to acquire employability skills (Boahin & Hofman, 2013). A set of skills like communication, professionalism, social, creativity, critical thinking and leadership may influence employees' employability in the workplace (Finch, et al., 2013). Individual with having technical and professional skill may not be able to advance the career because of not having interpersonal skill (Klaus, 2010). Acquisition and execution of several soft skills help an individual not only to get a job but also to upgrade the job status along with high sustainability in the organization.

Organizations' required soft skills during recruitment

Employers can assess an applicant's employability by measuring the accessibility of soft skills during recruitment. According to Robles (2012), soft skills are viewed as the pivotal factor for the probable recruitment in different industries and occupations. He also mentioned that graduates with interpersonal capability have the greater chance to get a job for gaining competitive advantage. Fresh graduates have the shortcomings in capability to write, solve a problem, think critically, generate creative ideas (White, 2013), display professionalism, respond in telephone and give customer service (McIntosh, 2013) as reported by employers. Employers also stated in Forbes articles

that current graduates are less prepared to perform in the workplace and are incapable to use their knowledge practically in communication and critical thinking based activities (Klebnikov, 2015). Graduates must possess the most important skill of interpersonal, problem solving and management to enhance their employability (Ramli et al., 2013; Ranasinghe, 2011). Employers are more interested to recruit experienced and soft skilled employees as they do not have the willingness to spend money on fresher's training for filling the vacant positions (Rao et al., 2011). Though different industry requires diverse categories of soft skills (Pace, 2011), employers give more value to having soft skill relevant to employment (Stoner & Milner, 2010).

A set of soft skills like communication, time management and administrative capabilities are extremely needed for employees' success in the workplace (Mitchell et al., 2010). Employer are demanding most important soft skills like communication, professionalism, integrity, teamwork, courtesy, sociability, positive attitude, strong work ethic, responsibility and adaptability from their employees (Robles, 2012). Globally operated employers give importance on cross-cultural expertise especially in global consciousness, language and economic issues during recruiting people (Gore, 2013). Employers are persistent in finding employees with great communication, creativity and social skills to create a competent workforce (Knell et al., 2007). To be a successful project manager, individual must have a set of vital soft skills like communication, leadership, administrative, problem solving, teamwork, elasticity, creative thinking and reliability (Baroudi & Pant, 2008). Graduates with communication, creativity, problem solving, team work, leadership, professionalism and adaptability skills have the high level of employability as they are more preferable by employers.

Techniques to improve soft skills for increasing employment opportunity

Usually, people can learn by observing, retaining and practicing others' attitude and behavior. However, fresher should increase their level of soft skills

to enhance their employability. Employment skills can be taught by university and other institutional learning facilities as perceived by employers which in reality are not occurred (Sparks & Waits, 2011). The engagement of industry can reduce the soft skills gap between the classroom learning and execution in the workplace (Teichler, 1998; Pillai, 2009). According to Rao (2015), "The right teaching and training methods will motivate students to acquire soft skill they will need in the world of work". He also mentioned that teachers should impose team working, case solving, role-playing, debating and outgoing instruments in the learning sessions along with individual feedback to assist students in acquiring soft skills. Soft skills can be developed by creating a sequential link among different aspects like self-awareness, locus of control, motivation, social awareness and social influence (Engelberg, 2015). Individuals can attain soft skills by getting supports from experienced and successful professionals, attending experts' conferences, coaching and training sessions. University teachers can give support to their students in understanding their attitudes, acquiring skills and finding professional paths (Ciappei, 2015). A variety of social and emotional abilities can be included in the teaching framework to educate students about soft skills along with technical skills (Schulz, 2008). Action learning could be the successive methods of training to acquire new non-technical skills or soft skills (Crosbie, 2005).

Organizations should arrange training to develop their employees' crucial skills of performance management, challenging discussions, teamwork, delegation and communication to motivate them and increase productivity. Both newly upgraded and experienced managers become competent by enhancing their abilities and self-confidence in four essential areas like self-awareness, delegation, communication and organizational skills with the assistance of supportive working attitude in the workplace (Garwood, 2012). A synchronized and coordinated form of faculties, learners, organizations, administrative personnel of universities and organizational training programs can teach soft skills to improve employability (Rao, 2014). Overall, a combination of self-awareness, emotional control, self-inspiration to learn,

involvement in education based team work, leadership practices in the course related group work, creativity exercise, and outcome based course work and networking can enhance graduates' soft skills to get employment opportunity.

Methodology

This study is qualitative in nature where data have been collected through in-depth interviews from experienced engineers and HR experts working in engineering and power solution service providing companies in Bangladesh. Data have been collected from three experienced HR personnel and two experienced engineers in May 2019. To validate the interview data, one Focus Group Discussion (FGD) has conducted in June 2019 among eight final year undergraduate engineering students from eight reputed public and private universities in Bangladesh. Final year students are from different engineering departments like Electrical and Electronic Engineering (EEE), Computer Science and Engineering (CSE), Electric and Communication Engineering (ECE) and Genetic Engineering and Biotechnology (GEB). Thematic analysis has been used for analyzing the qualitative data.

Analysis and findings from HR personnel perspective

Importance of soft skills for enhancing employability among graduate engineers

The newly graduated engineers are good at technology but they have lack of communication skills (HR personnel 1). Time management, team work and leadership skills are mostly absent among the newly graduated engineers (HR personnel 2). The newly graduated engineers are usually very good at numeric problem solving; but they might need communication skills, leadership skills for senior positions (HR Personnel 3). Employees at work are from different

age groups, races and ethnic background. To deal with them, interpersonal skills are required (HR personnel 1). But interpersonal skills are not the most important skills in case of hiring decisions (HR personnel 2). Employers give importance on interpersonal relationship in hiring decision especially for job offer and job promotion. Engineers have to deal with a lot of subordinates working under them in order to achieve organizational targets (HR Personnel 3). Moreover, adaptability is necessary for newly graduated engineers' employability (HR personnel 1). Time management, communication skill, team work and leadership skills are necessary for newly graduated engineers' employability (HR personnel 2). For engineers' employability, technical and analytical knowledge as well as interpersonal, teamwork and communication skill are also necessary (HR Personnel 3). Employers have started using tools and techniques for promoting soft skills like communication skills, time management and advance leadership skills (HR Personnel 1 & 2). They also have training materials for promoting soft skills (HR Personnel 2). Employers also arrange training on communication skills for engineers on a regular basis since they have skill deficiency (HR Personnel 3).

Soft skills necessary for developing engineers' career growth

Yes, soft skills are not only necessary for newly graduates but also necessary for developing career. The most important skill is – “Readiness for Digital Change” for developing career (HR personnel 1). Most important skills are problem solving skills, communication skills, leadership skills for developing career (HR personnel 2). Leadership Skills are necessary for career development (HR Personnel 3). Employers at present in Bangladesh arrange soft skills training on time management and personal habit changing skills (HR personnel 1). They emphasize on soft skills training in regards to relationship management, delegation, time management, team building (HR personnel 2). We have arranged soft skills training on team building (HR Personnel 3).

Communication skills and teamwork skills are more important than academic results for successful career. Team work is important at work where business communication plays behind it (HR personnel 1). Communication skills and teamwork skills are more important than academic results for successful career growth (HR personnel 2). Even if academically qualified engineers have to acquire teamwork skills to run a power plant project (HR Personnel 3). Soft skill acquisition and employment opportunity for engineers are related (HR personnel 1&2). Emotional intelligence is required for engineering students (HR personnel 1). Engineering students must attend workshops and seminars, read online materials on soft skills development (HR personnel 2). Soft skill acquisition and employment opportunity for engineers are not related for entry level position; but it is more applicable for senior positions. Teamwork and interpersonal skills are required for engineering students (HR Personnel 3).

Analysis and findings from engineers' personnel perspective

Importance of soft skills for enhancing employability

Soft skills like communication skills, time management, leadership skills, problem solving skills, interpersonal skills are important for one's job (Engineering Job). To run a manufacturing factory, engineers need to communicate with different departments such as supply chain, quality control, product development etc. (Engineer 1). Soft skills like communication skills, time management, leadership skills, problem solving skills, interpersonal skills are important for engineering job. Because, it helps to represent output, trace the existing problems blocking development and find out a way to solve problem (Engineer 2). Some power generating organizations are really helpful for developing soft skills. Therefore, engineers can solve different problems within a team (Engineer 1) and getting advices from seniors and

experts are now much easier (Engineer 2). For an engineer problem solving skill and leadership skill are most important for career development (Engineer 1). Communication skills (both formal and non-verbal) are essential for career development (Engineer 2).

Soft skills gap and employers' expectation from engineering graduates

Newly graduated students only have the theoretical knowledge, but they have lack of practical expertise. Soft skills lesson is a small part of engineering education compared to the business students. As such in initial stage, there is a soft skill gaps among the newly graduated engineers (Engineer 1). Engineering students need to complete some soft skills courses in their course curriculum. To work in a team and also to obtain better productivity, soft skills are important. As a result, the employer expects that the engineering student should have some sort of soft skills which will be improved by proper training (Engineer 1). Organizations want more trained engineers. There are soft skills gaps among graduate engineers due to the absence of formal educational and training backgrounds (Engineer 2).

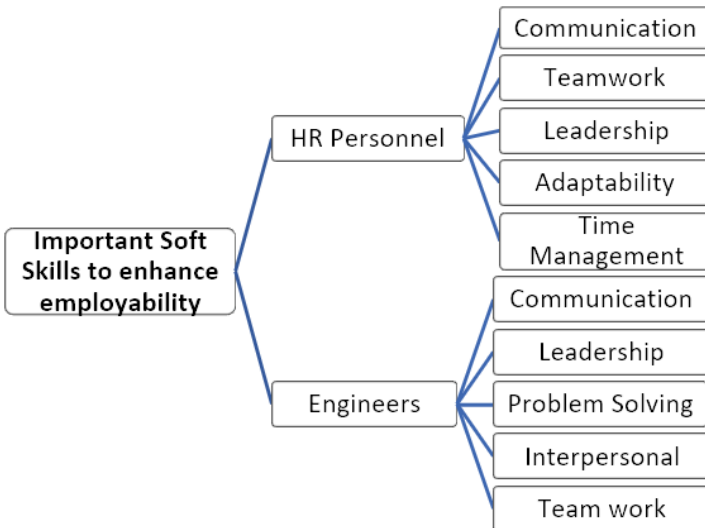
Training program on acquiring Soft skills for engineers

Many organizations do not arrange any training program on soft skills development. Many engineers are reluctant to participate in soft skills training programs such as relationship management, delegation, time management, team building etc. (Engineer 1). However, some of the organizations arrange training program mostly on teamwork and work process management which are not effective at all since these trainings do not have the skills transfer (Engineer 2).

Reducing Soft skills gaps and developing career growth

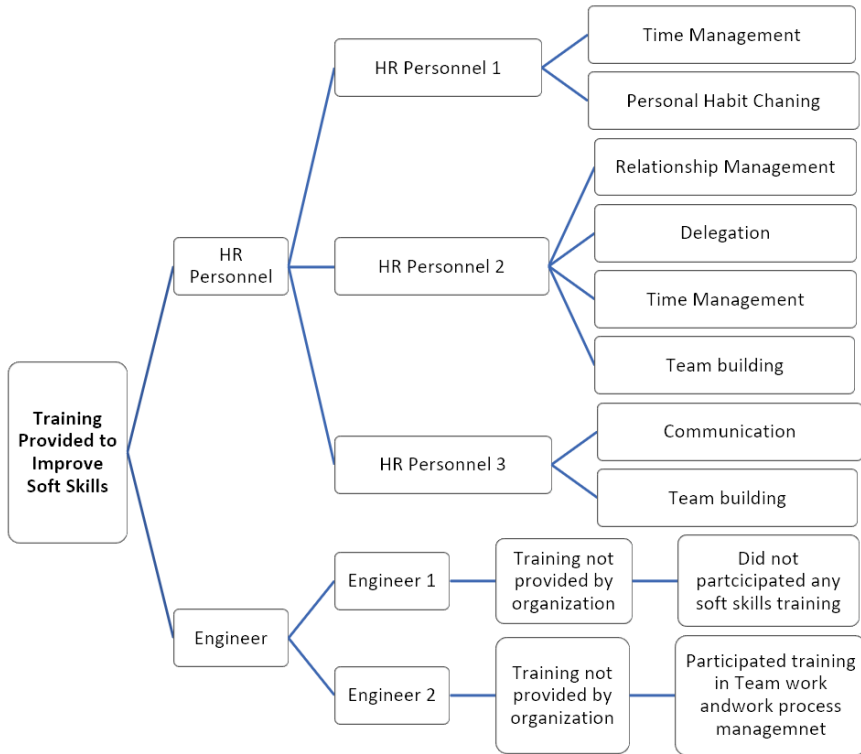
Soft skills like communication skills and teamwork skills more important than academic results for successful career of engineers. Academic results are necessary for the entry level job, but it has limited impact for career development. After a certain period, soft skills become more important than hard skills. Different trainings and workshops may be conducted among the engineers to reduce soft skills gaps. Additional courses may be introduced in their curriculum for developing required soft skills among engineering students (Engineer 1). Soft skills are complementary but professional skills are a must. Practical and realistic academic courses can reduce the soft skills gap. Industries must arrange training for newly appointed graduate engineers before starting their work so that they can grow and perform better (Engineer 2).

Figure 1. Important soft skills to enhance employability from the perspectives of HR personnel and engineer



Source: own study.

Figure 2. Training to improve soft skills from the perspectives of HR personnel and engineer



Source: own study.

Table 1. Findings from Focus Group Discussion (FGD) on engineering students' perspective

List of FGDs Participants	Themes				
Engineering student's opinion regarding softs skills	Soft skills development curriculum in current education system (Business Communication course)	Current teaching methods motivate soft skills acquisition	Participated in case study, role playing, debates, group discussion, presentations	Mentioned soft skills related information in CV	

F.1	Soft skills refer networking, communication, presentation and creative thinking	No. There is no Business Communication course in our course curriculum	No. current course curriculum is more focused on hard skills than soft skills	Participated in Group assignment	Yes, mentioned soft skills related information in CV
F.2	Soft skills is important	No	No. Course curriculum do not help us to develop presentation skills, group projects skills and other soft skills	Participated in presentation and group discussion	No, do not mention about soft skills in CV
F.3	Soft skills are important for jobs and career development	No	No. It does not motivate students for developing soft skills only focus	Participated in group discussion, presentation and group assignments	Yes, mentioned soft skills related information in CV
F.4	It refers communication skills	No	Right teaching methods can motivate the students to acquire soft skills	Participated in group discussion, case studies	No
F.5	Soft skills mean one's attitude, behavior and body movement, communicate with others, presentation skills	No	Teachers can help us for developing soft skills	Participated group discussion and debates	No
F.6	Learned soft skills refers communication skills, time management skills, leadership skills, problem solving skills by doing lab works and assignments	No	No response	Participated in lab work and assignment	No

F. 7	Learned soft skills like problem solving by doing assignment and project work	No	No response	Participated in project works	No
F. 8	Developed leadership skills, communication Skills through participated in different seminars	No	No response	Participated in assignments, group works, project works	No

Source: own study.

Discussions and conclusion

Most of the respondents in FGD have limited idea about soft skills and its importance for enhancing employability. According to them there are no soft skills development courses in their academic curriculum. Even they do not give soft skills related information in their CV. Their current teaching method cannot motivate them for developing soft skills. However, they have participated in group discussion, group presentation, case study, project work, debates, lab work that can improve their soft skills. In this competitive and global business environment, engineering universities need to start business communication related courses for undergraduate students. Engineering universities and academies need to develop some soft skills development programs for the undergraduate engineering students. Both HR personnel and engineers emphasizes on soft skills development like communication skills, team working skills, problem solving skills, leadership skills, and interpersonal skills are necessary for graduate engineers and also are necessary for their future career growth. Though, few organizations have arranged very some training programs on soft skills, engineers working in Bangladesh have less soft skills that have negative impact on individual job performance as well as organizational performance. Therefore, organizations should arrange more

training program on soft skills like team building, relationship management, delegation, communication and time management on a regular basis for increasing the productivity of their engineers. Due to time limitation, it was not possible to apply several data collection methods. Thus, the findings may not be generalizable to gather representative findings. Further study needs to be carried out with more sample size especially from engineers and students working in different sectors.

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Appendix

List of Participants in Focus Group Discussions (FGD)

• SL	• Details
• F 1	• Final Year Student of Electronic & Communication Engineering (ECE), East West University
• F 2	• Final Year Student of Genetic Engineering and Biotechnology (GEB) Department, University of Dhaka
• F 3	• Final Year Student of Genetic Engineering and Biotechnology (GEB) Department, Independent University
• F 4	• Final Year Student of Electronic & Communication Engineering (ECE), BUET
• F 5	• Final Year Student of Genetic Engineering and Biotechnology (GEB), Jahangirnagar University
• F 6	• Final Year Student of Computer Science and Engineering (CSE), RUET
• F 7	• Final Year Student of Electrical & Electronic Engineering (EEE), KUET
• F 8	• Final Year Student of Computer Science and Engineering (CSE), North South University

List of HR personnel

HR personnel 1: Senior Manager, Human Resources, TUV SUD Bangladesh Pvt Ltd (12 Years' Experience)

HR Personnel 2: Manager, Leads Corporation (12 Years' Experience)

HR personnel 3: Manager, HR & Admin, Bangladesh China Power Company (PVT.) Limited (15 Years' Experience)

List of Engineers

Engineer 1: Senior Principal Officer, One Bank Limited (10 Years' Experience)

Engineer 2: Coordinator, JIKA (10 years' Experience)