Listing the Essential Non-Technical Skills (NTS) for the Employability of Engineering Graduates in Bangladesh

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Abstract: The employability of engineering graduates is significantly influenced by their soft skills (SS) and cognitive skills (CS). Several skills that combine soft skills and cognitive skills, referred to as hybrid skills (HS), are also crucial for technical graduates. Non-technical skills (NTS) encompass soft skills, cognitive skills, and hybrid skills. Employers prioritize NTS over technical abilities throughout their careers. For sustained employment, these skills are essential success factors. While companies value technical skills during the hiring process, as engineering careers progress, employers place greater emphasis on NTS. This research aims to identify the soft skills, cognitive skills, and hybrid skills that contribute to workplace success in meeting employer expectations, spanning from early career stages to mid-career and advanced roles. Engineers are recognized for their exceptional technical skills, of which they take great pride. However, engineers must also possess a wide array of non-technical skills as they work with both people and machines in the industry. On average, most engineers share similar Intelligent Quotients (IQ). Technical skill gaps can often be filled with quick training. What distinguishes engineers from others are their non-technical skills, primarily personality traits, emotional intelligence (EQ), and advanced cognitive capabilities. Employability is determined by multiple factors, focusing here solely on its absolute dimension, which relies on the candidate's skill sets. While possessing technical abilities is a prerequisite for employment, modern employers increasingly prioritize NTS. It is an undeniable fact that engineers' soft skills, cognitive skills, and hybrid skills significantly influence their Annual Compensation Review (ACR). This study identifies 66 distinct skills necessary for engineers, including 46 soft skills, 14 cognitive skills, and 6 hybrid skills. Hybrid skills, a new category proposed by researchers, are a blend of cognitive skills and soft skills. To effectively manage their roles, engineers require these hybrid skills. Since not all skills hold equal value at every career stage, they are categorized accordingly. Engineers require these skills throughout their careers. Educational institutions and industries can obtain a standardized set of guidelines for updating engineering curricula and training modules, respectively.

Keywords: Non-Technical Skills (NTS), Soft Skills (SS), Cognitive Skills (CS), Hybrid Skills (HS).

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I. INTRODUCTION

The employability of engineering graduates is significantly influenced by non-technical skills (NTS). In addition to their academic background and technical expertise, graduates must possess NTS. Employers value soft skills, cognitive skills, and hybrid skills even more than technical abilities. These skills are essential for long-term career sustainability. A strong connection exists between employability and non-technical skills. While employers prioritize technical skills during hiring, they emphasize nontechnical skills even more as engineering careers progress. Different career stages require varying levels of non-technical skills. At specific points in their careers, employers look for particular non-technical skills. Studies indicate that a graduate's employability largely hinges on their nontechnical skills; however, engineers often lack these competencies. Regardless of their degree, soft skills, cognitive skills, and hybrid skills are crucial for engineers to succeed in their careers. Technical skills have traditionally been strong points for engineers, and their hard skills are a source of pride. While students tend to place greater emphasis on acquiring technical knowledge in school, they often overlook the necessity for engineers to interact with both people and machines, which requires a diverse range of nontechnical skills. Although recruiters value soft skills and cognitive skills just as much as technical skills, Bangladeshi engineering curricula do not adequately address these areas, even though possessing these skills significantly enhances employability. Non-technical skills are essential for both securing and maintaining a job. Most engineers have similar average intelligence quotient (IQ) levels, and technical skill

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gaps can be bridged with quick training. The primary differentiators that set engineers apart are non-technical skills, which include personality traits, emotional intelligence (EQ), and advanced cognitive capabilities.

➤ What is Skill?

Skill is the capacity to do an action with excellence (Google, 2021). According to Wikipedia (2021), skill is the acquired capacity to carry out an action with predetermined outcomes in a specific amount of time, energy, or both. Because economics, sociologists, and physiologists all define skills differently, the concept of skill can be a little hazy. In 2011, Professor Green summed up the idea of skill using three schools of thought: in economics, skill is the key component of human capital, which is the potential for future and present income. Income and skill are related. The variable that determines how income is distributed in society is skill. In society, people with higher skill levels make more money. The core idea of skill in sociology is that skills are the main factor that determine social classes. Because those with lower skill levels occasionally earn more money than those with higher skill levels, market valuation is not always based on skill. In psychology, competence and skill are related, and skill is everything that contributes to the development of competency. According to Green (2011), skill is divided into three categories: social (determined by social factors), expandable (improved through training and practice), and productive (value addition). Skills also include mental and physical aptitudes (Barrow, 1987).

➤ Hard Skills

Hard skills are technical, domain-specific abilities needed to do particular activities. Hard skills are cognitive abilities that are influenced by an individual's IQ (Ahmad & Idris, 2019). Hard skills cannot be converted; they are created and represented physically (Holbrook, 2009). According to Attia and Salama (2018), hard skills are knowledge that is simple to record and cultivate. From an educational background, hard skills are the factual knowledge and technical aptitudes required to carry out tasks in the workplace (Klaus, 2007). Hard skills are characteristics that are directly learned and contribute to the development of engineering expertise. Hard skills are observable, quantitative, and measurable (Rao, 2018).

> Soft Skills

Soft skills are more than interpersonal skills; they also enable more efficient use of technical abilities in the workplace (Klaus, 2007). Klaus defines soft skills as selfmanagement, interpersonal, social, and communication abilities. Being self-aware, trustworthy, conscientious, adaptable, critical thinking, initiative, empathy, confidence, integrity, self-control, organizational awareness, likeability, risk-taking, problem-solving, leadership, time management, and many other qualities are all included. Soft skills, also known as common skills or core skills, are defined by the online encyclopedia as follows: leadership, professional attitude, work ethic, intercultural fluency in all professions, problem solving, public speaking, professional writing, teamwork, digital literacy, and critical thinking (Wikipedia, 2021). In contrast to soft skills, where connection with people is crucial to the learning process, hard skills are learned through practice alone (Hening, 2016). Hard skills and soft skills are complementary, but neither one is useful on its own in the workplace (Klaus, 2007 and Rao, 2018). A judicial blend of both hard skills and soft skills is essential for success since soft skills are ethereal and challenging to measure and quantify in relation to how hard skills are displayed at work (Rao, 2018). It is challenging to quantify soft skills with tests (Mar, 2013). The terms "soft skills" have several other names, including "life skills" (WHO, 1993), "transversal skills" (ISFOL, 1998), "generic competences" (Tuning Project, 2000), "key competencies for a successful life and a wellfunctioning society" (OECD, 2003 and 2012), "key competences for lifelong learning" (UE, 2006), "21st century skills" (Ananiadou & Claro, 2009), "transferable skills" (RPIC-ViP, 2011), "skills for talent" (Manpower Group, 2014), "skills for social progress" (OECD, 2015), and "future work skills" (IFTF, 2010). It can be said that there is a very fine line separating hard and soft talents because a skill might be classified as hard in one field while appearing as soft in another (Lanka, 2012). For example, cultural sensitivity is a necessary skill for a human resources manager but an excellent skill for an engineer.

> Definition of Soft Skills

It is a matter of fact that there is no single definition of soft skills in literature. Scholars defined soft skills in their own way which is going to be discussed in this section chronologically. Emotional intelligence, or soft skills, includes social skills, empathy, self-awareness, selfmanagement, and self-motivation (Goleman, 1995). According to Bellier (1998), soft skills are cross-curricular competencies that may be applied in a variety of contexts after being taught in one. Success in life is predicted by soft skills (Heckman, 2000). According to Hayes (2002) and Perreault (2004), soft skills are personal qualities that determine how well a person interacts with people in order to successfully handle the demands, possibilities, and challenges of their employment role. Rather than being technical knowledge, soft skills are aptitude and personality traits and abilities (Tobin, 2006). According to Lorenz (2006), having soft skills makes one an excellent worker and a compatible colleague. Hard skills, sometimes referred to as technical abilities, are complemented with soft skills for effective career performance and daily living competence (Arkansas Department of Education, 2007). Wicked competencies are soft skills (Knight, 2007). According to Hewitt (2008), soft skills are non-technical, intangible, personality-specific abilities that assess a person's capacity for leadership, listening, negotiating, and conflict resolution. According to John (2009), soft skills serve as balancing abilities rather than as a replacement for hard skills. Per Meenu and Kumar (2009), soft skills are transportable. According to Maniscalco (2010), soft skills are a collection of attributes, routines, character characteristics, dispositions, and social graces that differ from person to person and are necessary in daily life. According to Heckman and Kautz (2012), soft skills are character attributes, objectives, driving forces, and inclinations that are highly esteemed in the workplace, educational system, and numerous other fields."

For a skill to be classified as a soft skill, it needs to have three characteristics: it needs to be transferable and valuable to any type of work; it also needs to be a process that takes time to acquire. (Han, 2013). According to Lippman (2015), soft skills are abilities, dispositions, and personal traits that support individuals in interacting with others, navigating their surroundings, performing well, and reaching their objectives. Graduates with soft skills are better able to use their technical acumen in the workplace (Wheeler, 2016). To succeed professionally and advance in your career, soft skills are crucial (Rao, 2018)

➤ Cognitive Skills

Unlike other kinds of skills, including physical skills, cognitive skills, also known as cognitive functions, cognitive abilities, or cognitive capacities, are mental talents. Literacy, self-analysis, logical reasoning, abstract thought, critical thinking, introspection, and mental math are a few instances of cognitive skills. The processing complexity of cognitive skills varies, spanning from simpler processes like perception and different memory functions to more complicated ones like decision-making, problem-solving, and metacognition (Wikipedia, 2024). Higher-order cognitive skills, often called higher-order thinking abilities, are advanced cognitive capabilities that extend beyond mere fact recognition and memorization. When we emphasize the importance of our students being innovative, creative, and evaluative, we are referring to these skills. Paul and Elder (2007) argue that when our thoughts are left unexamined, a significant portion of them can be biased, distorted, incomplete, ignorant, or blatantly prejudiced. However, the quality of our thoughts directly influences the quality of our lives and the things we create, produce, or build. Critical thinking is the ability to reason logically and systematically to understand the connections between concepts and facts. It helps us determine what to believe. In other words, it involves "thinking about thinking" to identify, assess, and correct inaccuracies in our reasoning. A solid education is founded on critical thinking. The broad definition of cognitive ability encompasses the "ability to reason, plan, solve problems, think abstractly, grasp complex ideas, learn quickly, and learn from experience" (Duckworth, 2019).

> Employability

There is no single definition of employability, and academics have provided their own interpretations. According to Pollard (1998), employability is the ability to navigate the labor market independently to achieve potential through long-term employment. Pollard identifies four primary components of employability: presentation (skills for securing a job), deployment (career management skills), assets (knowledge, skills, and attitude), and personal and external determinants (family dynamics, labor market, and macroeconomic issues). A common definition of employability describes it as the capacity to help graduates secure jobs and advance in their chosen fields (Askov and Gordon, 1999). The University of Exeter defines employability as the establishment of explicit processes that enable students to develop their ability to utilize various opportunities and skills to enhance their academic learning and increase their marketability to employers (Lee, 2000).

Employability, as defined by Brown (2003), refers to the dynamic shift in acquiring and maintaining different forms of employment. It encompasses a blend of skills, knowledge, and personal qualities that enhance a person's chances of obtaining and thriving in their selected profession, ultimately benefiting the workforce, the economy, the community, and the individual (Yorke, 2006). Chithra (2013) describes employability as the capacity to work, secure employment, and transition between positions within an organization. The United Kingdom Institute of Employment defined employability as the ability to obtain, maintain, and seek new job opportunities when required (Singh, Thambusamy, & Ramly, 2014). Employability is viewed as a process rather than a finished product that stems from learning how to learn (Jeswani, 2016).

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The human capital hypothesis contends that employability relies more on a person's capability to perform the job than on talent, experience, and other factors. This theory is frequently linked to the development of employability skills (Schultz, 1963). Employability skills are transferable, meaning they can be applied vertically and horizontally across all industries and job levels, from entrylevel to the highest positions in any organization (Sherer and Eadie, 1987). The essential skills needed to obtain, retain, and excel in a job are referred to as employability skills (Robinson, 2000). According to the Department of Education, Science, and Training (DEST) (2002), employability skills are critical for career advancement within a company, achieving one's full potential, and effectively supporting the organization's strategic goals. These skills are also essential for securing employment. Employability skills are transferable, enabling their application across various industries and all career levels, from entry-level jobs to CEO positions (Cassidy, 2006). Generic skills, or employability skills in engineering, are closely related to non-technical skills. These skills are both transportable and teachable (Lorraine and Sewell, 2007; Yorke, 2006). Employability skills are defined as "skills that make specific knowledge and technical skills fully productive" and are considered abilities necessary for nearly everyone to perform almost any job (Watts, 2006). Since 1980, employability skills have gained recognition and are typically defined as the preparation graduates need to secure employment and progress in their careers (Fugate, 2004). Employability skills represent core skill groupings that are transferable and encompass the foundational functional and enabling knowledge, skills, and attitudes required in the twenty-first-century workplace. They are crucial for achieving professional success across all occupational and educational levels (Overtoom, 2000). In 1990, the American Society for Training and Development (ASTD) identified 16 skill groups applicable across various occupations: (1) foundational competencies (reading, writing, computation); (2) communicative competencies (speaking, listening); (3) (problem-solving, flexibility competencies creative thinking); (4) developmental competencies (self-worth, motivation, goal-setting, career planning); (5) group competencies (interpersonal skills, teamwork, negotiation); and (6) influencing competencies (understanding corporate culture, leadership skills). The Secretary's report on achieving

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necessary skills (SCANS) from 1991 included workplace competencies and foundational skills in its definition of employability skills. These workplace competencies encompass five key abilities: technology, systems, information, resources, and interpersonal skills, which employees can effectively use to enhance productivity. Additionally, fundamental abilities, cognitive skills, and personal attributes serve as the foundational skills necessary for improving worker performance. In 1996, the Conference Board of Canada (CBC) conducted a study on employability skills in Canada. The CBC document indicated that employability skills can be utilized in various everyday tasks outside the workplace. The employability skills framework developed consists of three primary skill groups: teamwork skills, personal management skills, and foundational skills. Each group consists of various skill sets, such as using arithmetic. critical thinking, problem-solving, and communication abilities, all of which are considered essential talents. The Australian Department of Education, Science, and Training (DEST) emphasized eight skill groups in 2001: communication skills, teamwork skills, problem-solving skills, initiative and enterprise skills, planning and organizing skills, self-management skills, learning skills, and technology skills. Employers noted that certain non-skill-based behaviors and attitudes are equally important as employability and other technical or job-specific skills. These behaviors and attitudes are referred to as personal characteristics. Notable personal qualities include loyalty, commitment, honesty and integrity, enthusiasm, dependability, self-presentation, common sense, positive self-esteem, sense of humor, work-life balance, pressure tolerance, drive, and flexibility. In 2012, UNESCO Regional Bangkok defined employability as including: (1) communication skills; (2) logical, analytical, and problemsolving skills; (3) personality, confidence, and integrity; (4) flexibility and adaptability; (5) innovation and creativity; and (6) team spirit. These traits and competencies assist job seekers in securing employment. Three main skill components reflect employability skills: basics, which encompass problem-solving, communication, information management, and math skills; personal management, which includes a positive attitude and behavior, responsibility, adaptability, competencies for continuous learning, and safety in the workplace; and teamwork, which involves collaboration with others and participation in projects or tasks.

> Theories of Employability

Having the necessary employability skills does not ensure employment. It also depends on external factors. Employability cannot be understood outside of this dualism. Employability has two components: the relative (outside circumstances) and the absolute (knowledge, skills, and abilities) (Chithra, 2013). According to Chithra (2013), employability is thus also a relative concept that is governed by the laws of supply and demand in the labor market. However, due to their relative employability, graduates may not seem competitive in the labor market even though they are competent in a wide range of positions and jobs. Therefore, employability is a function of both one's positioning in the labor market and one's ability to meet the needs of employers. According to social closure theorists, the primary factor dividing the labor market is variations in educational attainment and kind, and the most significant component of labor market rivalry is the ability to obtain credentials (Hirsch, 1977). On the other hand, positional conflict theory acknowledges that a credential's worth is related to its scarcity value and that other resources may function as forms of capital, particularly if credentials become commonplace (Brown, 2000). The two ideas acknowledge that employability has two dimensions. According to positional conflict theory, employers take into account a candidate's job history, extracurricular activities, soft skills, social competence, and cultural fit, among other factors, in addition to their credentials. While these factors might not have mattered as much in an era of many good jobs, graduates of mass higher education are being pushed to rely more and more on their other skills, experiences, and resources in order to gain a competitive edge in the labor market.

Watts in 2006 Divided Employability in Three Categories

- Category1: Graduates are doing odd jobs and taking preparations for higher study or permanent jobs.
- Category2: It is a form of immediate employment. Graduates are work ready and join work without any training.
- Category3: It is sustainable employment. They are not only concerned to get the first jobs but also to remain employed throughout life.

Models of Employability DOTS model (Law & Watts 1977), which consists of:

- Decision learning decision making skills.
- Opportunity awareness knowing what work opportunities exist and what their requirements are
- Transition learning including job searching and self-presenting skills.
- Self-awareness in terms of interests, abilities, values, etc.

Bennett, Dunne & Carré (1999) proposed a model of course provision in higher education which included five elements:

- Disciplinary content knowledge,
- Disciplinary skills,
- Workplace awareness,
- Workplace experience and
- Generic skills.
- > Knight & Yorke in 2004 Proposed USEM model as below
- Understanding (viewed as being broader and deeper than 'knowledge').
- Skills (or, preferably, 'skilful practices', which includes the deployment of skills).
- Efficacy beliefs (including students' views of themselves and personal qualities)

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- Metacognition (including students' self-awareness regarding, and capacity to reflection, their learning).
- Dacre Pool & Sewell in 2007 Proposed CareerEDGE model which is as follows
- Career development learning
- Experience (work and life)
- Degree subject knowledge, understanding and skills.
- Generic skills
- Emotional Intelligence

The design of the model reflects an assertion that each component is absolutely essential and one missing element will considerably reduce a graduate's employability.

> Prominent soft skills and cognitive skills

From the literature, the prominent soft skills and cognitive skills that affect employability (EMP) are as follows:

- Soft Skills (SS Soft Skill):
- ✓ LIS Life Skill
- ✓ EQS- Emotional Intelligence
- ✓ WES- Work Ethics
- ✓ TES- Teamwork Skill
- ✓ PVS- Personal Vocational Skill
- ✓ IPS Intrepreneurial Skill

- ✓ SOC Social Capital
- Cognitive Skills (CS Cognitive Skill):
- ✓ CTS- Critical Thinking Skill
- ✓ PSS Problem Solving Skill
- ✓ ECS Effective Communication Skill
- ✓ DMS Decision-Making Skill
- ✓ MAS Management Skill
- ✓ LES Leadership Skills

Management Skill (MAS) and Leadership Skill (LES) are very important skills to consider in terms of employability however, it is very slippery to position these two skills in a particular side of soft skills or cognitive skills. Management skill is incomplete without decision making and decisionmaking is a higher-order cognitive skill hence, management is a cognitive skill. When we try to motivate people, we need to assess our audience using brain functions then motivate people so, it is also a cognitive skill.

> Theoretical Framework or Conceptual Framework

The conceptual framework, which some methodologists refer to as a "theoretical framework," is one of the trickiest aspects of qualitative research that many beginners find hard to understand.

• Conceptual Framework



Fig 1 Conceptual Framework or Theoretical Model

II. **RESEARCH METHODOLOGY**

Research Methodology is as Follows:

The approach of the study	: Qualitative Approach
Design of the study	: Grounded Theory
Area of the study	: Dhaka City
Population	: Engineering firms and industries in Dhaka City
Sample	: 21 to 30 interviewees
Sampling Technique	: Purposive (Theoretical Sample)
Data Collection Techniques	: In-depth interview and FGD.
Data collection tools	: Interview checklist
Data Analysis	: Coding

Interviews of 32 participants and their findings and listed and validated by another group of experts through FGD.

> Ethical Consideration

In order to gain the audience's confidence and trust, qualitative researcher must take all essential precautions. In addition, the following points will be shadowed as well.

- Key issues in ethical consideration .
- Taking consent from the interviewee
- Voluntary involvement of the participant
- Participant's confidentiality and anonymity
- Standards, regulations, and institutional rules
- No false promise
- **Research Limitations** Following are the constraints of this study
- Data from private organizations
- Focusing only on the higher-order cognitive skills
- Diploma Engineers representing electrical, civil. mechanical and computer engineering
- Internal factors of employability
- Absolute dimension of employability
- Data collected from the Dhaka City
- Theoretical sampling

Validation

The study report has gained credibility by correctly referencing and maintaining references throughout. Using the test-retest approach, validity has been established. After gathering qualitative data from professionals in the field, Focus Group Discussions (FGD) were conducted to

reevaluate the gathered information. In both situations, we obtain similar results, which supports the validity of the study.

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III. **DATA ANALYSIS & DISCUSSION**

Skills are very important for the employability; however, the research focuses on the necessitated skills for the engineers by the employers of Bangladesh. Off course, we are not against the technical skills which are always considered as the foundation skills for the engineers but these technical skills become valueless without the proper combination of soft skills and cognitive skills. Employers value soft skills and cognitive skills as same as technical skills and sometimes more than the technical skills.

From the qualitative data, we tried to find out the important soft skills and cognitive skills for the engineering graduates of Bangladesh. All soft skills and cognitive skills are not equally important for all career stages ranging from early career to mid-career to advance career. Soft skills are more or less equally important for all stages of the career. Skills which are characterized by the personal traits are called soft skills and skill which are characterized by the brain function are called cognitive skills. From the qualitative data analysis, we found a few types of skills which are a combination or mixer of soft skills and cognitive skills that is as hybrid skills. Motivation, named Leadership, Management, Conflict Management, Strategic Planning and Business Understanding are hybrid skills and mid and advance career require these skills at most. Grounded theory technique is applied to construct a theory which is grounded on data. The theory is developed by using the three popular coding techniques namely: Opening Coding, Axial Coding and Selective Coding.

> Opening Coding

All skills have been identified from the interviews. Each skill is considered as concept. While interviewing the experts, the significance of those skills and their insights were noted. All concepts are important for the engineering graduates. About 66 skills are noted which have incredible significance in the workplace for the engineering graduates.

► List of Skills

Listed skills are portrayed in the following section. We have found 66 skills and listed them serially. These skills are found important during the interview session.

Table 1 List of Skills During the Interview			
Abstract Thinking	Knowledge Sharing within Team		
Problem Solving	Confidentiality		
Abstract Reasoning	Time management		
Decision Making	Team management		
Effective Communication	Propensity to learn		
Quick Learning	Sincerity		
Learn from Experience	Willingness		
Remembering	Feelings		
Paying Attention	Grit		
Critical Thinking	Resilience		
Creative Thinking	Passion energy x courage x dedication		

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Analytical Thinking	Inspiration (Need for the achievement)
Positive Thinking	Commitment
Design Thinking	Trustworthiness
Motivation	Presentation skills
Leadership	Multitasking
Management	Proactiveness
Conflict Management	Negotiation skill
Strategic Planning	Humbleness
Business Understanding	Patience
Self-Awareness	Consistency
Self-Management	Stress management
Self-Motivation	Tenacious
Social Skills	Networking
Empathy	Work Delegation
Openness	Reliability
Conscientiousness	Don't be Greedy
Extraversion	Credibility
Agreeableness	
Ethics	
Honesty	
Integrity	
Discipline	
Teamwork	
Intrapreneurial	
Life Skills	
Professionalism	
Adaptability	

> Axial Coding

The main objective of this step is to categorize these skills with a view to building constructs. From the surveyed literature and opinion from the experts, three main constructs have been introduced namely; Soft Skills (SS), Cognitive Skills (CS) and Hybrid Skills (HS). The skills which are characterized by the personal traits and brain functions mainly thinking are constructed as Soft Skills (SS) and Cognitive Skills (CS). Higher order cognitive skills are treated as Cognitive Skills throughout the research. While undergoing this research, we found some concepts those which are neither Soft Skills or Cognitive Skills rather a combination of both. Those skills which are a mixer of both are named as Hybrid Skills (HS). Constructs and concepts are categorized as follows:

Table 2 Categorizing Skills			
Category A: Soft Skills (SS)	Category B: Cognitive Skills (CS)	Category C: Hybrid Skills (HS)	
Self-Awareness	Abstract Thinking	Motivation	
Self-Management	Problem Solving	Leadership	
Self-Motivation	Abstract Reasoning	Management	
Social Skills	Decision Making	Conflict Management	
Empathy	Effective Communication	Strategic Planning	
Openness	Quick Learning	Business Understanding	
Conscientiousness	Learn from Experience		
Extraversion	Remembering		
Agreeableness	Paying Attention		
Ethics	Critical Thinking		
Honesty	Creative Thinking		
Integrity	Analytical Thinking		
Discipline	Positive Thinking		
Teamwork	Design Thinking		
Intrapreneurial			
Life Skills			
Professionalism			
Adaptability			
Knowledge Sharing within Team			
Confidentiality			
Passion and dedicated mindset			
Time management			

Team management	
Propensity to learn	
Sincerity	
Willingness	
Feelings	
Grit	
Resilience	
Inspiration (Need for the achievement)	
Commitment	
Trustworthiness	
Presentation skills	
Multitasker	
Proactiveness	
Negotiation skill	
Humbleness	
Patience	
Consistency	
Stress management	
Tenacious	
Networking	
Work Delegation	
Reliability	
Don't be Greedy	
Credibility	

Selective Coding

The objective of the Selective Coding is to bring all skills under a single umbrella. All these skills are employability skills. Therefore, employability skills comprise of Soft Skills (SS), Cognitive Skills (CS) and Hybrid Skills (HS).



Fig 2 Selective Coding of Employability

Fact1: Employability is Non-Technical Skills Driven Technical skills that are taught at the time of graduation become less important with the passage of a career. It is tough for employers to differentiate candidates based non-technical skills during the selection process. Most of the interviews are based on technical skills. There are multiple levels of the screening process. The first level of the hiring process is technical skills driven. However, the final level is NTS focused. Multiple candidates are sent to the final level for a single vacant position. Most of the engineers have similar IQ levels. At the final level, the employer uses soft skills and cognitive skills checkers to differentiate candidates and hire

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the desired candidate with the required technical skills and superior soft skills and cognitive skills. Here, we can see that soft skills and cognitive skills single out engineers from the crowd at the time of selection. Soft skills and cognitive skills help to get the initial employment quickly. Most of the employers of engineering firms value soft skills and cognitive skills not only in the selection process but also in the sustainability of the employment throughout the career. Gaps in technical skills can be taught with a short training but it is very challenging to equip an engineer with the required soft skills and cognitive skills. Employers suggest that they do not fire engineers not have the technical skills but rather soft skills and cognitive skills. Employers sake engineers not having soft skills and cognitive skills.

Soft skills have a significant impact on employability. Employers added that yearly appraisal mostly depends on behavioral skills. In Annual Compensation Review (ACR), 30% to 40% of the questions are related to technical skills whereas, 70% to 60% of questions are related to NTS. Therefore, employability depends on the non-technical skills at large. Many engineers are very good at technical abilities https://doi.org/10.5281/zenodo.14942813

but very poor at demonstrating soft skills and cognitive skills in the workplace are considered worthless by the employers. Those engineers cannot continue their jobs. Employers value soft skills and cognitive skills on top of technical abilities therefore, job retention mostly depends on these nontechnical skills.

The wonderful finding of this research is that engineering careers are soft skills and cognitive skills oriented. Let's say an engineer graduates at the age of 22 and his/her retirement year is 60. His/her length of service is 38 years. Out of his/her 38 years, hardly 5 to 8 years are technical skills centric and the rest 30 to 33 years are soft skills and cognitive skills centric.

Therefore, non-technical skills explain 85% (33/(33+5) * 100% = 85%) employability whereas, technical skills explain 15% (5/(33+5) * 100% = 15%).

• Length of Service = 38 Years



Fig 3 Contribution of NTS in Life

There is another truth for computer engineers that creativity goes down with time. Initially, 5 to 10 years is the most creative period for the computer Engineers. However, after 10 years, engineers enter into management, and using soft skills, cognitive skills and hybrid skills, they earn a handsome salary. Creativity is high for the engineers in the junior and mid-level. The advanced level is NTS driven.



Fig 4 Significance of NTS in career for the Computer Engineers

Undoubtedly, Employability is non-technical skills driven. Employability is all about getting, keeping, and doing well on a job. Employer's satisfaction largely depends on NTS. Fact2: Contribution of Non-Technical Skills on Employability in Percentage

The research suggests that the engineering career is divided into three stages namely; early career, mid-career and advanced career therefore, non-technical skills explain employability differently in three stages which are as follows:

https://doi.org/10.5281/zenodo.14942813 Table 3 Contribution of NTS on Employability in Percentage

Skills/Career Stage	Early Career	Mid-Career	Advanced Career
Non-technical skills	Up to 50%	50% to 80%	80% to 90%

There are two types of engineers working in the industries. One is hardcore mainstream engineers and the other is services engineers. Services engineers require more soft skills but fewer cognitive skills. Mainstream engineers require more cognitive skills and fewer soft skills. Fact3: Required Soft Skills and Cognitive Skills at the different stages of the career

Required soft skills and cognitive skills at the different stages of career which are follows in the following section.

Soft Skills:

Table 4 Required Soft Skills at the Different Stages of the Career			
Early Career	Mild-Career	Advanced Career	
Self-Awareness	Self-Awareness	Sell-Awareness	
Self-Management	Self-Management	Self-Management	
		Sell-Motivation	
		Social Skills	
Empathy	Empathy	Empathy	
Conscientiousness	Openness	Openness	
Extraversion	Conscientiousness	Conscientiousness	
Agreeableness	Extraversion	Extraversion	
Ethics	Agreeableness	Agreeableness	
Ethics	Ethics	Ethics	
Integrity	Ethics	Ethics	
Discipline	Integrity	Integrity	
Teamwork	Discipline	Discipline	
Life Skills	Teamwork	Teamwork	
Professionalism	Intrapreneurial	Intrapreneurial	
Adaptability	Life Skills	Life Skills	
Confidentiality	Professionalism	Professionalism	
Passion and dedicated mindset	Adaptability	Adaptability	
Feelings	Knowledge Sharing within Team	Knowledge Sharing within Team	
Time management	Confidentiality	Confidentiality	
Propensity to learn	Passion and dedicated mindset	Passion and dedicated mindset	
Sincerity	Feelings	Feelings	
Willingness	Time management	Time management	
Grit	Team management	Team management	
Passion energy x courage x dedication	Propensity to learn	Sincerity	
Inspiration (Need for the achievement)	Sincerity	Willingness	
Commitment	Willingness	Resilience	
Trustworthiness	Grit	Passion energy x courage x	
Presentation skills	Resilience	dedication	
Multitasker	Passion energy x courage x dedication	Inspiration (Need for the	
Proactiveness	Inspiration (Need for the achievement)	achievement)	
Humbleness	Commitment	Commitment	
Patience	Trustworthiness	Trustworthiness	
Consistency	Presentation skills	Negotiation skill	
Stress management	Multitasker	Humbleness	
Tenacious	Proactiveness	Stress management	
Networking	Negotiation skill	Tenacious	
Reliability	Humbleness	Networking	
Don't be Greedy	Patience	Work Delegation	
Credibility	Consistency	Reliability	
	Stress management	Don't be Greedy	
	Tenacious	Credibility	
	Networking		
	Work Delegation		
	Reliability		
	Don't be Greedy		
	Credibility		

Table 4 Required Soft Skills at the Different Stages of the Career

ISSN No:-2456-2165 ➤ Cognitive Skills:

Table 5 Required Cognitive Skills at the Different Stages of the Care	eer
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Early Career	Mid-Career	Advanced Career
Abstract Thinking	Abstract Thinking	Problem Solving
Problem Solving	Problem Solving	Decision Making
Reasoning	Reasoning	Effective Communication
Effective Communication	Decision Making	Learn from Experience
Quick Learning	Effective Communication	Paying Attention
Remembering	Quick Learning	Critical Thinking
Paying Attention	Learn from Experience	Analytical Thinking
Creative Thinking	Remembering	Positive Thinking
Positive Thinking	Paying Attention	
Design Thinking	Critical Thinking	
	Creative Thinking	
	Analytical Thinking	
	Positive Thinking	
	Design Thinking	

> Hybrid Skills:

Table 6 Required Hybrid Skills at the Different Stages of the Caree	er
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Early Career	Mid-Career	Advanced Career
Business Understanding	Motivation	Motivation
	Leadership	Leadership
	Management	Management
	Conflict Management	Conflict Management
	Strategic Planning	Strategic Planning
	Business Understanding	Business Understanding
	_	

Fact4: Does the Engineering Curriculum have Sufficient Courses to Learn Soft Skills and Cognitive Skills?

It is the fact that the national engineering curriculum does not have provision for the soft skills and cognitive skills courses explicitly rather a few humanities and management courses. We have surveyed the engineering syllabi of both B.Sc and Diploma in Engineering and interviewed a few teaching professional and got the similar results. National engineering curriculum should incorporate a minimum course to train students on soft skills and cognitive skills at the time of their graduation.

Fact5: How can we improve the soft skills and cognitive skills of engineers at the institute level?

This research would be a readymade guideline for the institute on which they can inject skills to the students at the time of graduation. Curriculum must be innovative to accommodate all changes in the contemporary world.

- Expand the implementation of skills qualification framework as a mandatory requirement for all educational institutions and skills training institutes
- Design methods for training higher-order cognitive skills and soft skills
- Pilot new courses at institutions
- Assess foundational skills of students
- Train teachers for enhanced pedagogical skills

- Development of skills standard and qualification, and new curriculum
- Capacity for curriculum development with industry feedbacks among university faculty, National University, and BTEB
- Fact6: How can we improve the soft skills and cognitive skills of engineers at the organizational level?

This research would be a readymade guideline for the industry on which they can impart training to their newly hired graduates throughout the career. Learning soft skills and cognitive skills are lifelong process. None can be a master of soft skills and cognitive skills at a time. Organization should arrange training for their engineers on continuous development of soft skills and cognitive skills.

- Conduct job market analysis for skills demand in selected industries
- New course opening and curriculum design for education and training institutions are informed regularly by job market surveys
- Develop institution's capacity to conduct tracer study and employer surveys
- Delivery of workplace-based skills training programs for their employees

IV. CONCLUSION

Employability depends on many factors. The research focuses only the absolute dimension of the employability. Absolute dimension depends on the skill sets of the candidates. It is true that technical skills are must have skills to get jobs. However, the contemporary employers value nontechnical skills on top of the technical skills. It is also true that using the higher order cognitive skills, an engineer can explore his/her creativity across the organization whereas, soft skills make an engineer a dutiful and loyal officer to the company. Employers expect engineer are to be operational with all necessary skill sets of cognitive domains and superior personality traits. It is a hard truth that Annual Compensation Review (ACR) mostly depends on NTS of engineers. In Bangladesh, engineers are not involved in product development or enhancement rather than providing services to the customers and assembling parts except the job nature of computer programmers. So, engineers can acquire all kinds of technical skills within 5 to 8 years from their career journey. Engineers can acquire new technical skills by a short training. Therefore, the life of engineers is non-technical skills dominated. The research finds 66 individual skills required for engineers among which 46 are soft skill items, 14 are cognitive skills and 6 and hybrid skills items. Researcher proposes a new type of skill naming hybrid skills which is a combination of soft skills and cognitive skills. Engineers need these hybrid skills to manage the organization effectively and efficiently. All skills are not equally important for all stages of the career therefore; the skills are clustered in career stage wise. Hence the following section has been portrayed:

> Soft Skills

- Early Career (Self-Awareness, Self-Management, Self-Motivation, Social Skills, Empathy, Conscientiousness, Extraversion. Agreeableness, Ethics. Integrity, Discipline, Teamwork, Life Skills, Professionalism, Adaptability, Confidentiality, Passion and dedicated mindset, Feelings Time management, Propensity to learn, Sincerity, Willingness, Grit, Passion (energy x courage x dedication), Inspiration (Need for the achievement), Commitment, Trustworthiness, Presentation Skills, Multitasker, Proactiveness, Humbleness, Patience, Management, Consistency, Stress Tenacious, Networking, Reliability, Don't be Greedy and Credibility).
- Mid-Career (Self-Awareness, Self-Management, Self-Motivation. Social Skills, Empathy, Openness, Conscientiousness, Extraversion, Agreeableness, Ethics, Integrity, Discipline, Teamwork, Intrapreneurial, Life Skills, Professionalism, Adaptability, Knowledge Sharing within Team, Confidentiality, Passion and dedicated Feelings, Time management, mindset. Team management, Propensity to learn, Sincerity, Willingness, Grit, Resilience, Passion (energy x courage x dedication), Inspiration (Need for the achievement), Commitment, Trustworthiness, Presentation skills, Multitasker, Proactiveness, Negotiation skill, Humbleness, Patience,

Consistency, Stress management, Tenacious, Networking, Work Delegation, Reliability, Don't be Greedy and Credibility).

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- Advance Career (Self-Awareness, Self-Management, Self-Motivation, Social Skills, Empathy, Openness, Conscientiousness, Extraversion, Agreeableness, Ethics, Integrity, Discipline, Teamwork, Intrapreneurial, Life Skills, Professionalism, Adaptability, Knowledge Sharing within Team, Confidentiality, Passion and dedicated Time management, mindset, Feelings, Team management, Sincerity, Willingness, Resilience, Passion (energy x courage x dedication), Inspiration (Need for the achievement), Commitment, Trustworthiness, Negotiation skill, Humbleness, Stress management, Tenacious, Networking, Work Delegation, Reliability, Don't be Greedy and Credibility)
- > Cognitive Skills
- Early Career (Abstract Thinking, Problem Solving, Reasoning, Effective Communication, Quick Learning, Remembering, Paying Attention, Creative Thinking, Positive Thinking and Design Thinking)
- **Mid-Career** (Abstract Thinking, Problem Solving, Reasoning, Decision Making, Effective Communication, Quick Learning, Learn from Experience, Remembering, Paying Attention, Critical Thinking, Creative Thinking, Analytical Thinking, Positive Thinking and Design Thinking)
- Advanced Career (Problem Solving, Decision Making, Effective Communication, Learn from Experience, Paying Attention, Critical Thinking, Analytical Thinking and Positive Thinking)
- ➤ Hybrid Skills
- Early Career (Business Understanding)
- **Mid-Career** (Motivation, Leadership Management, Conflict Management, Strategic Planning and Business Understanding)
- Advance Career (Motivation, Leadership Management, Conflict Management, Strategic Planning and Business Understanding)

V. LIMITATIONS OF THE STUDY AND FUTURE RESEARCH

There are three direct limitations found in this study. One of the limitations is that there is only a limited population of engineering professionals who were participating in this study. In addition, the second limitation is that the research focuses only the absolute dimension of employability. The third limitation encountered in this study concentrates four engineering disciplines namely Electrical, Computer, Civil and Mechanical Engineering. The research aims to address the problems and solutions of both Diploma in Engineering

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and B.Sc in Engineering graduates. In future, separate guideline for the Diploma in Engineering and B.Sc in Engineering graduates will be produced that will be more specific from the generic consideration.

REFERENCES

- [1]. Cimatti, B. (2016). Definition, development, assessment of soft skills and their role for the quality of organizations and enterprises. International Journal for quality research, 10(1).
- [2]. John, J. (2009). Study on the nature of impact of soft skills training programme on the soft skills development of management students. Pacific Business Review, 19-27.
- [3]. Dean, S. A. (2017). Soft skills needed for the 21st century workforce (Doctoral dissertation, Walden University).
- [4]. Green, F. (2011). What is Skill?: An Inter-Disciplinary Synthesis. London: Centre for Learning and Life Chances in Knowledge Economies and Societies.
- [5]. Bridges, D. (1993). Transferable skills: a philosophical perspective. Studies in Higher Education, 18(1), 43-51.
- [6]. Safta, C. G. (2015). Cross-curricular competencies-Access path to professional development. Procedia-Social and Behavioral Sciences, 203, 348-354.
- [7]. Prihatiningsih, S. (2018, February). A Review of Softskill Needs in in Terms of Industry. In IOP Conference Series: Materials Science and Engineering (Vol. 306, No. 1, p. 012117). IOP Publishing.
- [8]. Dharmarajan, P. V., Pachigalla, R., & Lanka, K. (2012). The significance of inculcating Soft Skills in students in the process of teaching Hard Skills. International Journal of Applied Research and Studies, 1(2), 1-11.
- [9]. Truong, H. T., & Laura, R. S. (2015). Essential soft skills for successful business graduates in Vietnam. Sociology Study, 5(10), 759-763.
- [10]. Nusrat, M., & Sultana, N. (2019). Soft skills for sustainable employment of business graduates of Bangladesh. Higher Education, Skills and Work-Based Learning.
- [11]. Jackson, D., & Chapman, E. (2012). Non-technical skill gaps in Australian business graduates. Education+ Training.
- Bist, S. S., Mehta, D., Harshadbhai Mehta, D., & [12]. Meghrajani, D. (2020). Employers' perception regarding employability skills of management students undergoing internship. Bist, SS, Mehta, N., Mehta, D., Meghrajani, I.(2020). Employers' perception regarding employability skills of management students undergoing internship. International Journal of Work-Integrated Learning, 21(2), 145-161.
- [13]. Dharmarajan, P. V., Pachigalla, R., & Lanka, K. (2012). The significance of inculcating Soft Skills in students in the process of teaching Hard Skills. International Journal of Applied Research and Studies, 1(2), 1-11.

- [14]. Dharmarajan, P. V., Pachigalla, R., & Lanka, K. (2012). The significance of inculcating Soft Skills in students in the process of teaching Hard Skills. International Journal of Applied Research and Studies, 1(2), 1-11.
- [15]. Robles, M. M. (2012). Executive perceptions of the top 10 soft skills needed in today's workplace. Business communication quarterly, 75(4), 453-465.
- [16]. Lee, L. T., & Lee, T. T. (2011). Investigating soft skills for success in the workforce: Perceptions of elementary school teachers. International Review of Social Sciences and Humanities, 1(2), 140-149.
- [17]. Lohana, P. (2015). Soft skills for young professionals. IEEE Engineering Management Review, 43(3), 23-24.
- [18]. Afroze, R., Eva, T. P., & Sarker, A. R. (2019). Do soft skills matter? A study on employability of engineering graduates in Bangladesh. Journal of Intercultural Management, 11(3), 21-44.
- [19]. Rendevski, S. J., & Abdelhadi, A. (2017). Teaching and learning soft skills in university physics courses: Perspectives of the UEA Higher Colleges of Technology. International Journal of Physics & Chemistry Education, 9(4), 1-8.
- [20]. Ritter, B. A., Small, E. E., Mortimer, J. W., & Doll, J. L. (2018). Designing management curriculum for workplace readiness: Developing students' soft skills. Journal of Management Education, 42(1), 80-103.
- [21]. Deming, D. J. (2017). The value of soft skills in the labor market. NBER Reporter, 4, 7-11.
- [22]. Chaibate, H., Hadek, A., Ajana, S., Bakkali, S., & Faraj, K. (2020). A Comparative Study of the Engineering Soft Skills Required by Moroccan Job Market. International Journal of Higher Education, 9(1), 142-152.
- [23]. Shukla, A., & Kumar, G. (2017). Essential soft skills for employability–A longitudinal study. Advances in Economics and Business Management, 4(6), 362-367.
- [24]. Hening, D. A. (2016). Soft skills development of engineering students through mentoring in cooperative education (Doctoral dissertation, Ohio University).
- [25]. Kranov, A. A., & Khalaf, K. (2016, April). Investigating the employment gap: What employers want from engineering graduates. In 2016 IEEE Global Engineering Education Conference (EDUCON) (pp. 1198-1201). IEEE.
- [26]. Zaharim, A., Yusoff, Y., Omar, M. Z., Mohamed, A., & Muhamad, N. (2009, July). Engineering employability skills required by employers in Asia. In Proceedings of the 6th WSEAS international conference on Engineering education (Vol. 1, pp. 194-201).
- [27]. Cassidy, S. (2006). Developing employability skills: Peer assessment in higher education. Education+ training.
- [28]. Overtoom, C. (2000). Employability skills: An update. ERIC Clearinghouse.

https://doi.org/10.5281/zenodo.14942813

- ISSN No:-2456-2165
- [29]. Rao, M. S. (2014). Enhancing employability in engineering and management students through soft skills. Industrial and Commercial Training.
- [30]. Nair, N. R., & Mukherjee, G. (2015). Soft skills: The employability success mantra. Language in India, 15(10), 209-215.
- [31]. Capretz, L. F., & Ahmed, F. (2018). A call to promote soft skills in software engineering. arXiv preprint arXiv:1901.01819.
- [32]. Yahya, M., Iskandar, S., & Sunardi, S. (2017). Technical skills and employability skills of vocational high school students in Indonesia. Journal of Scientific Research and Studies, 4(6), 148-155.
- [33]. Suarta, I. M., Suwintana, I. K., Sudhana, I. F. P., & Hariyanti, N. K. D. (2017). Employability skills required by the 21st-century workplace: A literature review of labour market demand. Advances in Social Science, Education and Humanities Research, 102(58), 337-342.
- [34]. Chithra, R. (2013). Employability Skills–A Study on the perception of the Engineering Students and their Prospective Employers. Global Journal of Management and Business Studies, 3(5), 525-534.
- [35]. Saad, M. S. M., & Majid, I. A. (2014). Employers' perceptions of important employability skills required from Malaysian engineering and information and communication technology (ICT) graduates. Global Journal of Engineering Education, 16(3), 110-115.
- [36]. Singh, P., Thambusamy, R. X., & Ramly, M. A. (2014). Fit or unfit? Perspectives of employers and university instructors of graduates' generic skills. Procedia-Social and Behavioral Sciences, 123, 315-324.
- [37]. Misra, R. K., & Khurana, K. (2017). Employability skills among information technology professionals: A literature review. Procedia computer science, 122, 63-70.
- [38]. Chithra, R. (2013). Employability Skills–A Study on the perception of the Engineering Students and their Prospective Employers. Global Journal of Management and Business Studies, 3(5), 525-534.
- [39]. Brown, P., Hesketh, A., & Wiliams, S. (2003). Employability in a knowledge-driven economy. Journal of education and work, 16(2), 107-126.
- [40]. Adrian, M. (2017). Determining the skills gap for new hires in management: Student perceptions vs employer expectations. International Journal for Innovation Education and Research, 5(6), 139-47.
- [41]. Yorke*, M., & Knight, P. (2004). Self-theories: some implications for teaching and learning in higher education. Studies in Higher Education, 29(1), 25-37.
- [42]. Watts, A. G. (2006). Career development learning and employability. York: Higher Education Academy.
- [43]. Cotton, K. (1993). Developing employability skills. School improvement research series, 15.
- [44]. Fugate, M., Kinicki, A. J., & Ashforth, B. E. (2004). Employability: A psycho-social construct, its dimensions, and applications. Journal of Vocational behavior, 65(1), 14-38.

- [45]. Pool, L. D., & Sewell, P. (2007). The key to employability: developing a practical model of graduate employability. Education+ Training.
- [46]. Seetha, S. (2013). Necessity of Soft Skills Training for students and professionals. International Journal of Engineering, Business and Enterprise Applications, 4(2), 171-174.
- [47]. Robinson, J. P. (2000). What are employability skills. The workplace, 1(3), 1-3.
- [48]. Saad, M. S. M., & Majid, I. A. (2014). Employers' perceptions of important employability skills required from Malaysian engineering and information and communication technology (ICT) graduates. Global Journal of Engineering Education, 16(3), 110-115.
- [49]. Wheeler, R. (2016). Soft skills-the importance of cultivating emotional intelligence. AALL Spectrum, 20(3), 28.
- [50]. Artess, J., Mellors-Bourne, R., & Hooley, T. (2017). Employability: A review of the literature 2012-2016.
- [51]. Rao, M. S. (2018). Soft skills: Toward a sanctimonious discipline. On the Horizon.
- [52]. Brewer, L. (2013). Enhancing youth employability: What? Why? and How? Guide to core work skills. ILO.
- [53]. Wesley, S. C., Jackson, V. P., & Lee, M. (2017). The perceived importance of core soft skills between retailing and tourism management students, faculty and businesses. Employee Relations.
- [54]. Padmini, I. (2012). Education vs employability-the need to bridge the skills gap among the engineering and management graduates in Andhra Pradesh. International Journal of Management and Business Studies, 2(3), 90-94.
- [55]. Ogbeide, G. C. A. (2006). Employability skills and students' self-perceived competence for careers in hospitality industry (Doctoral dissertation, University of Missouri--Columbia).
- [56]. Collet, C., Hine, D., & Du Plessis, K. (2015). Employability skills: perspectives from a knowledgeintensive industry. Education+ Training.
- [57]. Lankard, B. A. (1990). Employability--The Fifth Basic Skill. ERIC Digest No. 104.
- [58]. World Bank. (2018). Bangladesh Skills for Tomorrow's Jobs: Preparing Youth for a Fast-Changing Economy. World Bank.
- [59]. Ibrahim, R., Boerhannoeddin, A., & Bakare, K. K. (2017). The effect of soft skills and training methodology on employee performance. European Journal of Training and Development.
- [60]. Bartel, J. (2018). Teaching soft skills for employability. TESL Canada Journal, 35(1), 78-92.
- [61]. Lippman, L. H., Ryberg, R., Carney, R., & Moore, K. A. (2015). Workforce Connections: Key "soft skills" that foster youth workforce success: toward a consensus across fields. Washington, DC: Child Trends.
- [62]. Misra, R. K., & Khurana, K. (2017). Employability skills among information technology professionals: A literature review. Procedia computer science, 122, 63-70.

ISSN No:-2456-2165

- [63]. Cresswell, J. (2013). Qualitative inquiry & research design: Choosing among five approaches.
- [64]. Nakata, S., Nagashima, Y., Rahman, M., Rahman, T., Chowdhury, A., & Rahman, M. (2018). Bangladesh skills for tomorrow's jobs: Preparing youths for a fastchanging economy. Working Paper AUS0000069, World Bank, Washington, DC.
- [65]. Haven, B. J., Khan, N. S., Hussain, Z., Alam, A., & Shahriar, S. (2019). Bangladesh Development Update: Tertiary Education and Job Skills.