A Study of University Students' Perception towards their own Employability Skills

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Abstract

University students are the future workforce. Providing students with appropriate skills become critical for higher education institutions. Interestingly, little has been done to assess students' perceptions of their employability skills. Therefore, it is critical to understand and bridge the gap between what is delivered by institutions and how students understand and perceive employability..

This paper is an exploratory study on the perception of undergraduate students towards their own employability skills. The findings reveal that while the students perceived themselves to be generally competent in 10 employability skills, they were not excellently competent in most of the skills. Year-wise, there was a statistically significant difference in mean scores of students' perception of employability skills for Year 2 and Year 3 students with Year 4 students respectively. Year 1 students, however, had no statistically significant differences from other year students. Statistically, the gender-wise differences were not significant.

KEYWORDS: Employability, graduates, employers, perception, career

Background

In India, more than 50 percent of its total population is under 25 years old, and 62 percent is in the 15-59 age bracket. Within the next 20 years, 15 to 29-year-olds will account for more than 12 million of India's future workers (India Skills Report 2018). The India Skills Report 2021, however, shows that India's youth employability has decreased to 45.9%, with 40% of the highest employable talent falling into the 18-21 age group. Compared to the previous year's analysis of youth employability, this is a significant drop, but it accurately reflects the average age group of India's new professional landscape.

Reports based on studies by McKinsey Global Institute (2021) and the World Bank (2020) have indicated that Covid 19 started as a health emergency, but it is rapidly evolving into an employment crisis significantly affecting the future of the workforce, level of employment, and its composition going forward. COVID-19 has presented unexpected challenges that are forcing businesses to change how they operate. There is an increasing trend of remote work environments, shifts to flexible working hours, and virtual meetings. Activities like negotiations, critical business decisions, and brainstorming sessions, may lose effectiveness when done remotely. When some sectors like e-commerce, telemedicine, online banking, and streaming entertainment will boom, other sectors, that require human contact may struggle. The adoption of automation and AI may be hastened. More people may need to

transition to new jobs in the post-COVID-19 scenario. There is hence a need for policymakers to take steps and to support training and education programs for workers. Along with this, reformative measures in education are needed to create skills for young students in the post-covid workforce and to prepare them for career opportunities in high-demand industries that are changing the landscape of employability.

Few studies (Rothwell et. al. 2009, Tymon, 2009) have examined how students view the development of employability skills. Perceived preparedness for the workplace greatly affects a student's performance and, ultimately, their confidence. Students who do not comprehend what employers expect of them leave themselves unprepared both for entry into the labour market and for coping with change.

Employability: Meaning

The term 'employability' refers to the competencies and abilities that graduates need to enhance their opportunities for employment in the labour market, as well as the economic and social development of the country (Jeswani, 2016; Phago & Thwala, 2015 cited by Harry et al. (2018). Orji (2013) cites Yorke and Knight (2006) who defined employability as: "a set of skills, understanding, and personal attributes that make graduates more likely to gain employment and succeed in their chosen careers" (p.8). Yorke (2005) considers employability as a graduate's achievements and chances of getting a graduate job and succeeding at it.

According to Martin et al. (2008), “the employability landscape is complex…” and employability skills should be viewed as a “continuum of learning that contributes to work progression”, rather than just a means of entry to the workforce. In their study, they examined 14 employability skills: communication, teamwork, problem-solving, literacy, numeracy, general IT skills (information technology), timekeeping, business awareness, customer care, personal presentation, enthusiasm, and commitment. Meanwhile, Falconer and Pettigrew (2003) identified the following qualities as crucial for graduates and professionals: teamwork, verbal and written communication, problem-solving, information management, and negotiation skills, as well as listening, planning, resourcefulness, and innovation. But studies and institutions have been grappling with defining the set of skills, competencies, and attributes that make up employability skills.

When it comes to employment readiness, students should be armed with suitable skills and prepared for work in their field (Harvey, 2001). The Career Colleges Trust (2015) carried out a survey noting that most students believed they were being prepared for exams rather than developing skills for their future careers. Mann and Huddleston (2015) found that many recruiters also reported that young people applying for roles often lacked employability skills. According to Berntson et al. (2006), competence development and job tenure are key features of perceived employability. An individual who believes they are highly employable will think it relatively easy to acquire new employment. It is therefore important to understand and bridge the gap between what is delivered by institutions and how students perceive employability within their courses and programs.

The Study

This study was undertaken with the students of NIIT University (hereafter referred to as NU) India. NIIT University was identified because of easy accessibility of students. NU is a not-for-profit private university at Neemrana, Rajasthan, India. Education at NU recognizes that the rapid change in digital technology will make jobs redundant even while the student is engaged in acquiring a degree. Therefore, NU focuses on students' holistic personality development, combined with equipping them with the knowledge and skillsets independent of time and space to contribute and lead in any technological environment of future industry. But are students of NU provided with opportunities to improve their employability skills through the courses and programs offered? What do they think is their level of preparedness across business and management sectors?

To answer these questions, an exploratory study was conducted among students at NU, India, to learn how they perceive their employability skills. Most NU students are between the ages of 18 and 24 and represent the future workforce.

Methodology of the Study

In this study, a cross-sectional survey design was used to collect information "as it is" about students' employability skills without altering the situation under examination. Cause-and-effect relationships were not investigated.

Sample of the study

Several programmes are offered by NU viz, 4-year programs in B.Tech. 4-year Integrated MBA (IMBA) and 3-year BBA, 5-year Integrated B.Tech.- M. Tech. the programme, 4-year Integrated M.Sc. Computer Science Programme, and 2-year Comprehensive MBA programme. The students come from all over India.

For this study, participants were drawn from the first year, the second year, the third year, and fourth-year students from the B.Tech program as well as from the IMBA program of NU. The data was collected during the time of the pandemic and 232 students consisting of both boys and girls participated.

Measuring Instrument

Reviewing published literature and questionnaire on employability skills, the Student Employability Skills Questionnaire (SESQ) from a study by Orji (2013) was considered to assess the employability skills level of the NU students. It was adapted as the researchers were confident that not only the questions are good indicators of their concepts of interest but would have already been tested at the time of their first use. The questionnaire lists ten essential skills for employability, such as communication, problem-solving, teamwork, planning and organizing, creativity/innovation, independent study, numeracy, ICT, self-management, and time management.

The questionnaire has two parts, Part 1, consists of 34 statements with a 5-point rating of ‘Excellently (4)’ to ‘Not at all (0)’. The items were grouped according to the above 10 skills categories. Part 2, has a question that talks about the relevance of these skills in today’s world.

With some modifications to the ICT skills, the test-retest method was used to determine the reliability of the modified instrument. Ten BTech students answered the questionnaire twice within four weeks, yielding two sets of responses, which were correlated, yielding an R-value of 0.77.

Procedure

Due to the current pandemic situation, it was not possible to administer the "Student Employability Skills Questionnaire (SESQ)in a f2f mode. Google Form, the free online tool from Google, was used to create the survey questionnaire SESQ for the students to use to assess their perception towards employability. BTech and IMBA students were emailed information about the survey and invited to complete it. Students were briefed about the study such that they understood the relevance of responding as accurately as possible. Data were thus collected through the online survey.

Conducting survey research online has advantages and disadvantages. These advantages include the convenience of accessing individuals in distant locations, having easy access to difficult-to-contact participants, and having automated data collection, which is less time-consuming. Among the disadvantages is uncertainty over data validity, sampling issues, and concerns regarding online survey design, implementation, and evaluation. This is a challenge and may be seen as one of the study's limitations.

Results and Discussions

Data were collected from a total of 232 students in BTech and IMBA programmes. BTech students from all four years participated whereas, for IMBA, the first and second years participated. 79.31% of the students were from BTech programmes. Students who participated in the study had the following characteristics as illustrated in Table 1.

Table 1: Profile of Participating Students

Year	Age range	Average Age	Course		N	Gender	
			B Tech IMBA			F M	
1st year	18-20yrs (33.62%)	20.37 years	62 (33.70%)	16 (33.33%)	78	17 (26.56%)	61 (36.31%)
2nd year	19-22yrs (17.67%)		27 (14.67%)	14 (29.17%)	41	10 (15.63%)	31 (18.45%)
3rd year	19-23yrs (38.79%)		72 (39.13%)	18 (7.5%)	90	31 (48.44%)	59 (35.12%)
4th year	21-24yrs (9.91%)		23 (12.5%)	0	23	6 (9.38%)	17 (10.12%)
Total			184 (79.31%)	48 (20.69)	232	64 (27.59%)	168 (72.42%)

Table 1 indicates that the total sample consists of 27.59% Female students and 72.41% Male students. It is interesting to note that a greater number of female students in the third year participated in the study. The age-wise distribution shows that 38.79% of all students belong to the 19-23 age range, followed by 33% in the 18-20 age range, 17.67% students in the 19-22 age range, and 9.91% in the 21-24

age range. The average age of the student sample is 20.37 years, reflecting the average age group of India's emerging professional landscape.

Fig 1 illustrates the category-wise employability skills indicating that students perceived themselves as competent in all 10 employability skills categories. The overall mean score of all responses is 2.91(Std. deviation = 0.89). Thus, overall employability skills competency is *"Very Well" (3).*
However, as shown in Fig 1 the students perceive that their competency in *Independent study* and *Teamwork* is *"Excellent"* compared to other skills.

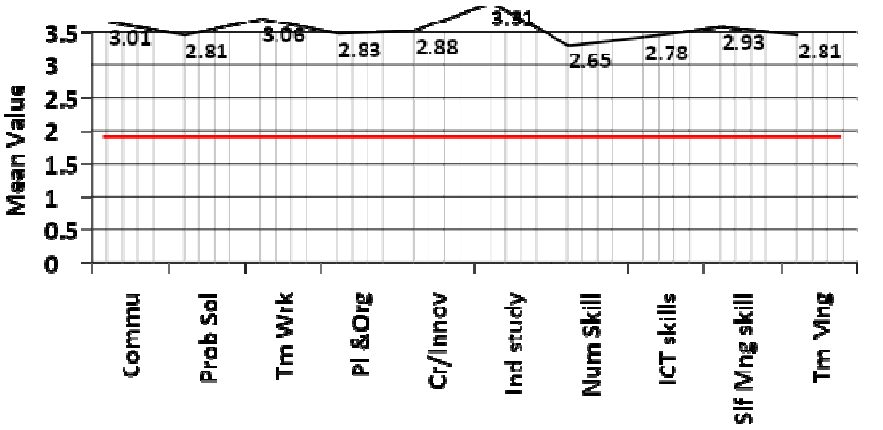

Figure 1: Category wise Employability Skills of the Total Sample of Students

Table 2: Frequency, Mean scores and Standard deviation of responses to items on Learners Employability Skills

Employability skills categories	**Skill Statements (ST)**	**Excellent**	**Very well**	**Somewhat**	**Just a little**	**Not at all**	**N**	**Mean (Std. dev.)**	***c Mean (std dev).**	**Assessment**
Communi-cation	ST 1	75	99	48	10	0	232	3.03 (0.84)	3.01 (0.85)	C
	ST 2	86	101	43	2	0	232	3.17 (0.75)		C
	ST 3	66	81	66	18	1	232	2.83 (0.95)		C
Problem-solving	ST 4	56	117	51	8	0	232	2.94 (0.8)	2.81 (0.90)	C
	ST 5	56	75	78	20	3	232	2.69 (0.97)		C
	ST 6	58	89	66	17	2	232	2.79 (0.93)		C
Teamwork	ST 7	110	81	34	4	3	232	3.25 (0.86)	3.06 (0.92)	C
	ST 8	70	83	61	12	6	23	2.86		C

							2	(9.99)		
	ST 9	55	66	80	25	6	232	2.60 (1.04)		C
	ST 10	111	83	30	4	4	232	3.26 (0.88)		C
	ST 17	97	84	34	11	6	232	3.10 (0.99		C
	ST 18	91	104	31	5	1	232	3.2 (0.78)		C
	ST 19	94	86	45	5	2	232	3.14 (0.86)		C
Planning & organizing	ST 11	73	67	68	20	4	232	2.80 (1.04)	2.83 (0.95)	C
	ST 12	59	91	61	18	3	232	2.80 (0.95)		C
	ST 13	65	90	68	8	1	232	2.91 (0.86)		C
Creativity / Innovation	ST 14	51	94	77	9	1	232	2.80 (0.84)	2.88 (0.85)	C
	ST 15	40	95	84	12	1	232	2.69 (0.83)		C
	ST 16	97	84	41	10	0	232	3.16 (0.86)		C
Independent study	ST 20	130	83	19	0	0	232	3.48 (0.64)	3.31 (0.73)	C
	ST 21	105	99	25	2	1	232	3.31 (0.73)		C
	ST 22	86	93	49	4	0	232	3.13 (0.80)		C
Numeracy	ST 23	49	86	70	23	4	232	2.66 (0.98)	2.65 (0.95)	C
	ST 24	47	75	90	18	2	232	2.63 (0.92)		C
ICT skills	ST 25	56	77	72	20	7	232	2.67 (1.03)	2.78 (0.98)	C
	ST 26	45	80	80	22	5	232	2.59(0.98)		C
	ST 27	101	85	38	5	3	232	3.19 (0.88)		C
	ST 28	60	81	72	14	5	232	2.76 (0.98)		C

	ST 29	56	80	71	16	9	232	2.68 (1.04)		C
Self-management	ST 30	67	106	57	2	0	232	3.03 (0.76)	2.93 (0.80)	C
	ST 31	53	100	70	7	2	232	2.84 (0.84)		C
Time management	ST 32	70	82	71	7	2	232	2.91 (0.90)	2.81 (0.95)	C
	ST 33	68	92	59	10	3	232	2.91 (0.91)		C
	ST 34	54	69	84	16	9	232	2.62 (1.04)		C

*cMean = mean for employability skill sub-categories. Overall mean = 2.91, Std. deviation = 0.89

It can be seen that the mean scores of all 34 Statements are over the assessment point (Mean = >2.0 (C=Competent); mean < 2.0 (NC=Not Competent); 2 is the total average score). The mean scores range from 2.59 (Statement 26) to 3.48 (Statement 20) indicating that the students perceived themselves to be competent in all 34 employability skill statements. Combining/categorizing similar statements, Table 2 also reveals means of the employability skills category for communication, problem-solving, teamwork, planning and organizing, creativity and innovation, independent study, numeracy, ICT skills, self-management, and time management respectively.

In response to the question "Do you think the 10 employability skills considered are most important to employers nowadays?", all students in the cohort said YES they thought these skills were very important.
It is evident from Table 2 that students' competency in various categories of employability skills varies. The order of competency is: Independent study>Teamwork > Communication>Self-management>Creativity/Innovation > Planning and Organizing>Problem-solving and Time Management>ICT Skills > Numeracy. Independent study (3.31) is the highest-ranked employability skills competence as perceived by students. Independent study empowers and teaches students to learn by themselves (Williamson, 1995) and to become motivated and trained in their responsibilities as well as in their learning ability (Broad, 2006).

According to Damoah et al. (2021), employers generally consider willingness to learn to be a vital skill. Incorporating independent study skills into the workplace is an important part of continuous competence development (Manuti et al. 2015) which is constantly changing in the real world. There is a strong emphasis at NU on ensuring that students 'Learn to Learn' to become responsible individuals capable of life-long learning (https://www.niituniversity.in/programmes/b-tech).

In contrast, students perceived Numeracy skills (2.65) as the least competent employability skill. According to Mutodi and Ngirande (2014), mathematics

(numeracy) perceptions and beliefs are the results of past experiences, which have both cognitive and affective dimensions (Aguilar, et al. 2012). On the cognitive side, it is the knowledge, beliefs, and other cognitive representations of a person, while on the affective side, it is the feelings and attitudes the person has towards mathematics. A lack of numeracy has a financial and economic cost for the individual. For productivity levels to rise, every industry must have competent workers with good number skills. Numeracy is an equal, vital, and supportive partner in helping students learn to cope with the quantitative demands of modern society https://www.nationalnumeracy.org.uk/sites/default/files/nn124_essentials_numeracy report_for_web.pdf). This skill can be enhanced by incorporating and integrating numeracy across the curriculum.

Students in different course-years will experience different learning environments. Maturity is believed to play a role in a person's ability to take responsibility for his or her thoughts, feelings, and behaviour. During a learning situation, it affects their ability to control the various emotions they may experience and to keep track of their thoughts. The year-wise analysis was conducted in this context. Figure 2 summarizes the Employability Skills of students by year and category.

To determine if the means of the groups are significantly different, QI Macros, a Statistical Process Control (SPC) software package plugin for Microsoft Excel, was used to conduct One-Way ANOVA Post Hoc Tests. Table 3 shows that, as determined by a one-way ANOVA, there is a statistically significant difference between groups (F (3,36) = 3.20, p = 0.03).

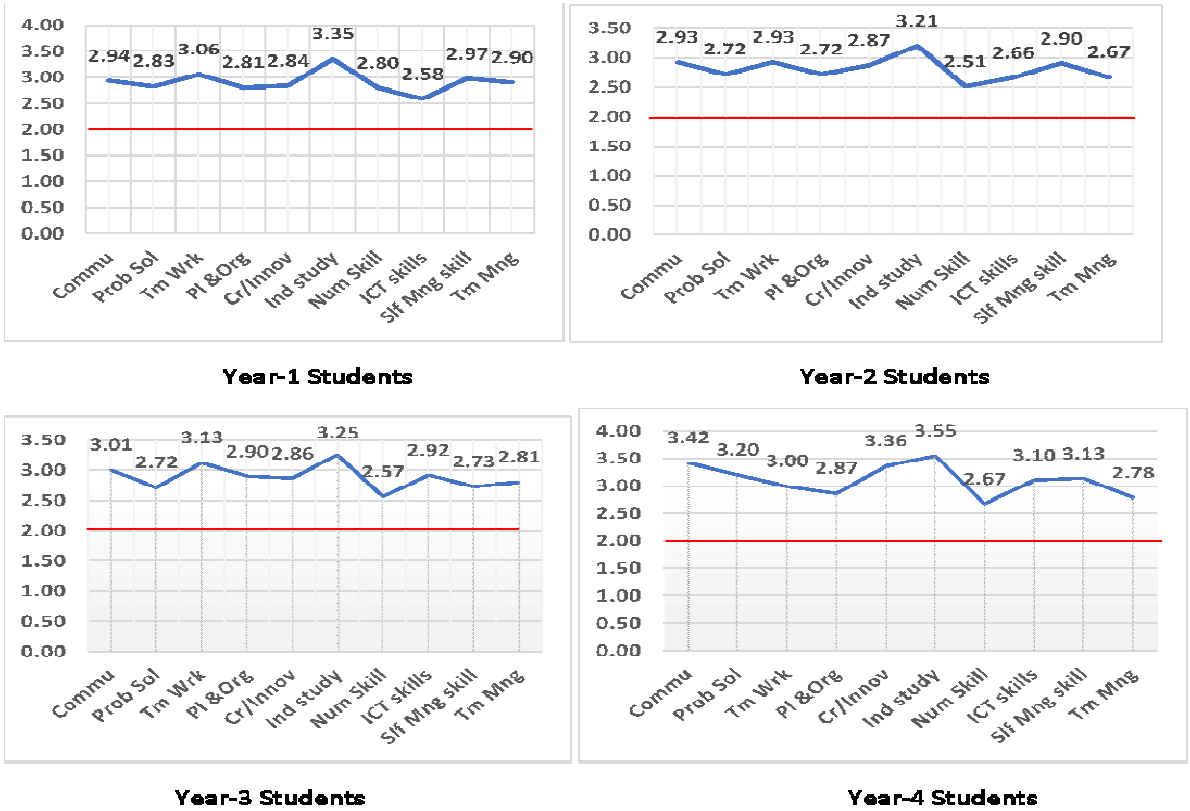

Fig 3: Year-wise, Category-wise Employability Skills of the Sample of Students

Figure 2: Year-wise, Category-wise Employability Skills of the Sample of Students

Table 3: One way ANOVA of Year-wise Means of Employability Skills

ANOVA		Reject Null Hypothesis because p < 0.05 (Means are Different)				
Source of Variation	*SS*	*df*	*MS*	*F*	*P-Value*	*F crit*
Between Groups	0.482343	3	0.160781	3.200677	0.035	2.866266
Within Groups	1.808404	36	0.050233			
Total	2.290747	39				

Various factors were compared with the mean differences in post hoc tests to identify significant differences, and the following findings were found:

i. For Year 2 and Year 4, mean differences (0.297) > Tukey's HSD (0.269), indicating that the mean for Year 2 students (M=2.81, SD=0.87) was significantly different from the mean for Year 4 students (M=3.11, SD=0.90) at $p<0.05$.
ii. For Year 3 and Year 4, mean differences (0.220) > Fisher's LSD (0.203) indicating that statistically, the mean score of Year 3 (M=2.89, SD= 0.88) was significantly different from the mean score of Year 4 students (M=3.11, SD=0.90) at $p <0.05$.
iii. Year 1 (M=2.81, SD=0.87) however, had no statistically significant differences in mean scores with Year 2 (M=2.81, SD= 0.87) or Year 3(M=2.89, SD= 0.88) or Year 4(M=3.11, SD=0.90) respectively.
iv. Year 2(M=2.81, SD= 0.87) also did not have discernible significant differences in mean scores with Year 3(M=2.89, SD= 0.88).

Point (i) and Point (ii) above reflect that compared to students of Year 2 and Year 3; students of Year 4 perceived a better level of competency in employability skills. On the contrary, compared to other Year students, Year 1 students did not indicate a better or less level of competency in employability skills.

Byrne et al. (2012), states that students' expectations of higher education are influenced by the type of university and the course they are studying, as they attempt to align their course with "their perceived abilities, interests and personalities". Considering Year-wise students in different courses it is believed that in the first year, the academic focus is on the acquisition and improvement of basic skills and competencies and the exploration of a wide variety of disciplines. The first year is a time of self-assessment, a time for students to get to know themselves and to begin to identify interests (what they like to do), skills (what they do well), and values (what things are important to them). The Year 1 students in this study did not show any significant differences from Year 2, Year 3, or Year 4 students in their perception of employability skills. As pointed out by Shrestha et al. (2019) this might be explained by the fact that first-year students are not exposed to all the areas and are not too stressed by the study. The literature further suggests there appear to be no differences between first and second-year students' expectations of higher education (Kandiko & Mawer, 2013) having an impact on the perception of employability skills.

During the second year at university/HEI, students are asking big questions and feeling the pressure of making important career and life decisions. Both personal relationships and academic choices are involved in this stage. Additionally, challenging coursework increases rigor in the studies of these students, resulting in the development of new social connections or the strengthening of those that already exist. At the same time, they feel busier managing their social relationships and becoming more involved in leadership positions on campus. As the emphasis on careers increases, Year 2 students are expected to begin researching what they hope to pursue after graduation. Study results reveal that their perception of employability skills differs significantly from that of Year 4.

In Year 4, students continue to specialize and often look for employment instead of pursuing further graduate studies. They then conduct a search campaign, targeting recruiters, contacting them, and learning to interview through career development workshops, resource information, and mock interviews. As a result, these students appear to develop a comprehensive vision of their employability skills and competence. This is reflected in this study.

Academically, the focus of Year 3 is on specialization, with a more serious focus on the career fields of particular interest. Although students are still paying attention to course requirements, they begin to see them in a new context, understanding that they may provide a background and enrichment for the major, require skills development that will improve competencies in the major, and offer knowledge and exposure that will make the major more marketable in the chosen career field. In this case, the difference between Year 3 and 4 students was statistically significant.

Several studies have found notable differences between men and women in developing employability competencies (Jackson 2016; Nabi and Bagley 1999; O'Leary 2019). A gender-based analysis was conducted to determine this. Figure 3 illustrates the Male Female Mean scores for each category of employability skills.

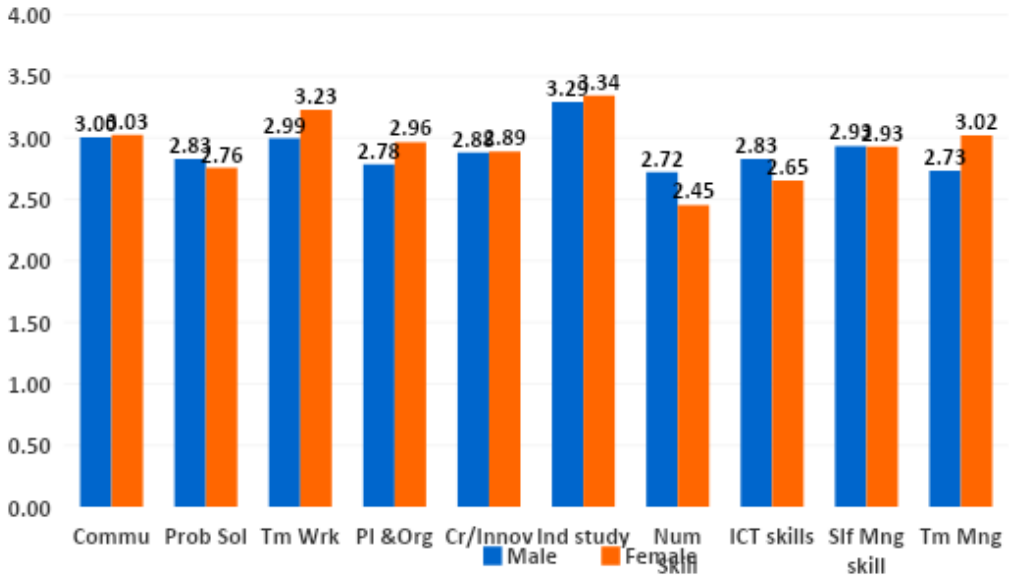

Figure 3: Employability Skills of the Sample by Gender and Category

According to Figure 3, the competency across some categories of employability skills varied by gender. It can be seen that Communication, Self-Management skills, Creativity/Innovation, Problem Solving, and ICT skills competencies are rated higher by male respondents than by female respondents who rated higher in Teamwork, Time Management, Planning and Organizing skills. According to Rosser (2001), teamwork is a pedagogy that women prefer because it involves collaborative learning, rather than competitive learning, interactional negotiation, peer encouragement, and a safer environment for those unsure of their abilities. Studies (Kaya et al. 2012) have shown that female students generally manage their time better than male students. However, both male and female students perceived their competency in Numerical skills to be the least.

Table 4: Gender differences of Employability Skills Competency as Perceived by Students

Employability skills categories	**Gender**				
	Male		**Female**		**Mean Difference**
	Mean	**Std. Dev.**	**Mean**	**Std. Dev.**	
Communication	3.00	0.84	3.02	0.86	-0.02
Prob Solving	2.83	0.87	2.76	0.97	0.07
Team Work	2.99	0.95	3.23	0.8	-0.24
Planning & Organisation	2.78	0.93	2.96	0.98	-0.18
Creativity/Innovation	2.88	0.83	2.89	0.89	-0.01
Independent Study	3.29	0.74	3.34	0.68	-0.05
Numerical Skills	2.72	0.93	2.45	0.98	0.27
ICT skills	2.83	0.98	2.65	0.95	0.17
Self-Management	2.93	0.79	2.93	0.81	0.00
Time Management	2.73	0.94	3.02	0.95	-0.29

Table 4 shows that there was a slight difference in the mean scores of male and female students in their perception of employability skills. Hence, One-way analysis of variance (ANOVA) was performed to determine whether there were any statistically significant differences between the means of the two groups. The F value (F= 0.074) was very small, and $p>0.05$ indicates that statistically, the gender-wise means of the groups were not significantly different. According to DuPre et al. (2011), perceptions did not significantly differ by gender or ethnicity, though they did differ by class year with juniors and seniors reporting higher perceptions than

freshmen. However, Nabi and Bagley (1998) found that there were differences between the perception of male and female respondents regarding the quality and importance of employability skills.

Conclusion

Rothwell et al (2009) stated that students' perception of engagement with their studies does not greatly affect their employability. However, it is becoming increasingly important for students to acquire the relevant skills and competencies to remain relevant and compete in an increasingly competitive work environment. Students' employability skills have increasingly become a concern among stakeholders in education as well as employers.

This study focused on university students' employability skills. Following are the major findings:

- Students perceived themselves as competent in all 10 categories of employability skills. Overall, employability skills competency was "Very Well".
- Based on the students' perceptions, independent study is the highest-ranked competency in employability skills. The least ranked competency in employability skills was ICT and numeracy skills.
- Year-wise, Year 1 students showed no significant differences from Year 2, Year 3, or Year 4 students in their perception of competencies towards employability skills.
- According to statistics, Year 2 and Year 3 students' perceptions of employability skills differed significantly from that of Year 4. Year 4 students perceived greater competency in employability skills
- While gender-wise competency perception varied across some categories of employability skills, statistically the differences were not significant.

Although the findings of the study are encouraging, when asked, "Do you get opportunities to develop these skills through your NU courses?", 54.74% responded 'Yes', 40.09% responded 'Partially' and only 5.17% responded 'No'. There is a scope for increasing the perception of essential employability skills of future professional students so that they can deal with today's job market and in-demand skills. According to The Future of Jobs Report 2020 by the World Economic Forum, in-demand skills differ greatly from the skills of 10 or even 5 years ago , and the pace of change is accelerated by the current situation.

There are however certain limitations in this study. First, data were obtained from students studying in specific departments (i.e., the B.Tech program IMBA program of NU). Future research should have an extended emphasis that includes a greater number of academic disciplines. Also, the online collection of data was based on self-reported information and the evaluation of perceived employability from students' perspectives only. Future studies may consider the employer's perspective which would prove beneficial enabling the comparison of employer requests during the recruitment process, specifically with regard to the qualifications that make university students employable. It is necessary to better identify which employability skills may be lacking, to be clearer on the exact skills needed by the students, and to provide direction for setting tasks and enhancing the curriculum.

Based on India Skills Report 2021, the overall decline in employability among India's youth is attributable to the stringent measures that were imposed during the lockdown and subsequent pandemic-related restrictions. To tackle the decline in employability among the youth, skill-enhancing programs, and employability training will be critical. To become more employable, students from various fields are taking online classes and acquiring certifications. The employability skills development of students during their course work must be assessed to get feedback and modify strategies as needed. The current pandemic has highlighted the need for most Higher Education Institutions (HEIs) to create flexible and resilient education systems that will meet student expectations and the accelerating social and economic transformations expected in wider society. There is a need not only to rethink what and how we teach, but also what shape HEIs need to take to meet the changing demands of students, employers, and society.

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