

AN EMPIRICAL STUDY ON HOW DIGITAL SKILLS AND AI LITERACY ACT AS DRIVERS FOR CAREER READINESS AMONG FINAL-YEAR STUDENTS

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ABSTRACT

Artificial Intelligence (AI) and digital transformation are coming together quickly changing the skills that separate real job readiness from what you learn in school. We can notice that employers now want graduates who can use AI-enabled tools and systems not just be subject-competent. This study looks at how final-year students' career preparedness is affected by digital skills and AI literacy, placing the conversation within the larger objectives of transformative and future-focused education. There are four key objectives of the study: to characterize the demographic profile of students in their final year of study, to explore different digital skill levels based on demographic characteristics, to investigate the relationship between digital skills and AI literacy, and lastly to assess their interaction impact on career readiness. In the analysis of primary data which will be gathered by administering a structured questionnaire to final-year students, Correlational analysis for the relationship between digital skills and AI literacy, and regression analysis for their total predictive effect will be employed. According to the study, digital skills and AI literacy will show up as important, positively associated indicators of career preparedness, with the degree of this correlation differing depending on demographic factors including gender, academic program, and past technology exposure. With a view to enable the development of a graduate workforce that is future-ready and technologically-enabled, it is expected that the findings will provide essential information to policymakers, curriculum developers, and institutions of higher learning to narrow the gap between academic preparation and industry requirements.

Keywords: Digital competence, AI literacy, Employment preparedness, Outgoing graduates, Transformative education

I. INTRODUCTION

With the progression of digital gadgets and artificial intelligence from supplemental devices to necessary aspects of both education and employment, the educational institution is changing fast. The capacity of a graduate to navigate digital platforms, comprehend data, and work well with AI-driven systems now shapes the traditional classroom-to-career track, which was

previously primary in domain knowledge and technical certifications. Almost every business now requires digital skills and abilities, which include information and data literacy, digital communication, content creation, and problem-solving in technologically advanced surroundings. AI literacy, which is the ability to comprehend, assess, and apply AI tools responsibly while also being aware of their potential, constraints, and ethical ramifications, is layered on top of this.

These skills have become more and more important in determining career readiness for final-year students who are on the verge of finding work or continuing their education. Career readiness is the degree to which a person is equipped to handle opportunities, demands, and expectations present in the working world. Disparities still exist for the degree to which students develop digital and AI competencies can be influenced by a number of factors, including socioeconomic background, gender, stream of study, access to technology, and the quality of digital exposure during courses. When institutions of higher education are developing curricula and systems of support that can truly prepare their graduates for the jobs of a workplace that makes use of digital technologies and relies heavily on artificial intelligence, it is necessary to understand the gaps between digital competencies and AI literacy and their relation to career preparation processes. This research is framed within the paradigm of Transformational Education and Future Learning and aims to provide empirical evidence about the impact of digital competencies and AI literacy on the career readiness of graduating students, as well as how demographic conditions affect this relationship. The results of the recorded research aim to provide recommendations for curriculum creation, policies of the institution, and strategies about the transition from teaching and learning in a traditional classroom to successful carriers in the future.

II. LITERATURE REVIEW

Prensky (2001) introduced the concept of "digital natives," referring to students raised in the digital environment and arguing that being familiar with technology from childhood significantly changes how people learn and perceive the process of learning. This term is still widely used in discussions concerning higher education digital readiness.

Eshet-Alkalai (2004) conceptualised digital literacy as a multidimensional construct comprising photo-visual, reproduction, branching, information, and socio-emotional literacies, moving the discourse beyond mere technical operation of devices toward the cognitive and social skills required to function effectively in digital environments. This framework remains widely cited in studies that attempt to operationalise "digital skills" as a measurable variable.

The research conducted by Van Laar, van Deursen, van Dijk, and de Haan (2017) has established a link between digital skills and 21st century skills, concluding that digital competency cannot be seen separately from other general employability competencies such as critical thinking, communication skills, teamwork, and creativity. This finding affirms the idea

that digital competencies are a means for achieving the basic graduate competencies, rather than being a substitute for them.

This argument has been supported by findings of the JISC Digital Capabilities framework design in the UK, which states that digital competency refers to more than just basic ICT skills only because it denotes the skill of digital creation, digital collaboration communication, and working with the digital identity, and information literacy. These dimensions closely correspond to the employability-oriented digital skills studied in graduate readiness research.

Long and Magerko (2020) provided one of the first comprehensive definitions of AI literacy, characterizing it as a set of skills that allow people to use AI as a tool in a variety of settings, such as online, at home, and at work, as well as to critically assess AI technologies. Their theory distinguishes AI literacy from just technical AI training by identifying ethical judgment and cognitive understanding as essential components.

Building on this, Ng, Leung, Chu, and Qiao (2021) conducted an exploratory review of AI literacy scholarship and proposed four interconnected competency dimensions: knowing and understanding AI, using and applying AI, evaluating and creating AI applications, and demonstrating ethical awareness of AI. These dimensions provide an organized framework for assessing students' AI literacy, which the current study

The OECD's work on AI and the future of skills has emphasized that the capacity to comprehend, challenge, and engage with AI systems is becoming a crucial employability skill, on par with the significance of traditional digital literacy ten years ago, as these systems become integrated into business tools. Research in this field indicates that AI literacy consists of the owner's academic knowledge as well as a critical and ethical understanding, or the ability to recognize the inaccuracies and limitations of results produced by AI software.

Tomlinson (2012) studied the idea of employability combining practical and theoretical approaches and argued that it should be viewed as a complex combination of identity, mental resources, social capital, and human capital instead of having a fixed list of skills. This approach allows positioning digital skills and AI literacy within the concept of evolving employability of graduates instead of being considered as separate elements of the educational process.

The Future of Jobs report from the World Economic Forum shows that analytical thinking, technology literacy, as well as AI and big data are among the fastest-growing skills along with increase of the skills gap which can complicate the preparation of graduates unless educational institutions adjust their educational programs in accordance with technology advances at the appropriate speed.

Research regarding employability skills in India has repeatedly shown the presence of a gap between the skills learned in educational programs and those desired by employers; this

phenomenon is often referred to as the skills gap. Evidence shows that having technical skills is not enough to ensure full readiness to take one's first job. These skills should be complemented by soft skills that can be utilized when applying technology. Some of them include skills related to digital learning or other soft skills relevant to current job requirements.

All of the works reviewed indicate at least four things that pertain to this research. Firstly, digital skills constitute a multidimensional rather than a single construct. Secondly, AI literacy is now emerging as an important competency that goes beyond general digital literacy. Thirdly, it has been established that companies and international organizations regard both concepts as metrics crucial for employability. Fourthly, the skill gap is affected by demographic and contextual factors. Results of this research are presented in this paper.

III. OBJECTIVES OF THE STUDY

1. To study the demographic profile of final-year students.
2. To examine the significant differences in digital skills among final-year students based on selected demographic characteristics.
3. To analyse the relationship between digital skills and AI literacy among final-year students.
4. To determine the influence of digital skills and AI literacy on the career readiness of final-year students.
5. To suggest measures for strengthening digital skills and AI literacy among final-year students in order to enhance their career readiness

IV. RESEARCH DESIGN AND ANALYSIS

Demographic Profile

1. Gender
180 responses

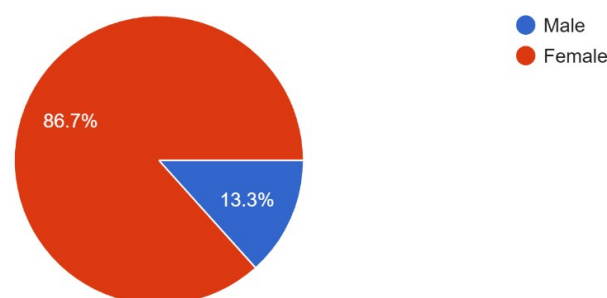


Figure 1: Gender of the respondents

As per the above chart, The data covered 86.6% of Female Final year students and 13.3% of Male Final year students. This shows that the reach of the form to female students.

2. Age

180 responses

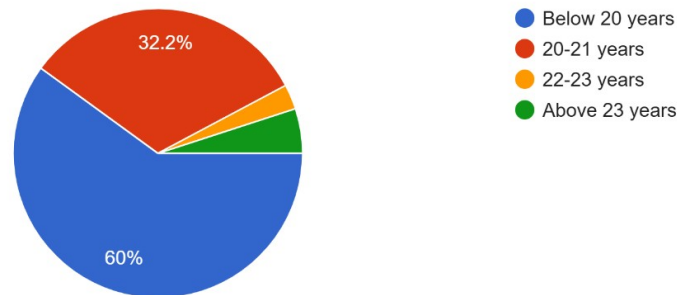


Figure 2: Age of the respondents

From the data above we see that 60 percent of respondents are than 20 years. 32.2% of respondents are in the 20 to 21 age range. The rest of respondents are between 22 and 23 years old and five percent of respondents are older, than 23 years.

3. Programme of study

180 responses

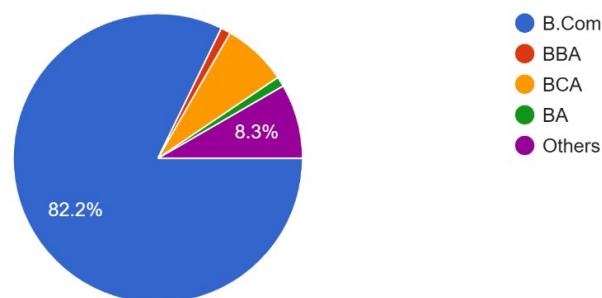


Figure 3: Degree category of the respondents

82.2% of the respondents are of B.Com category and 8.3% are of other degree category. 7.2% of the students are from BCA and 1.1% constitutes BBA and BA each respectively.

4. Have you participated in any digital skills or AI-related training/workshops?

180 responses

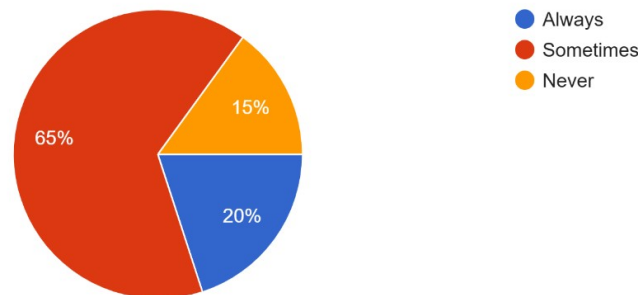


Figure 4: Participation in AI programmes

From the above chart, We can confirm that 65% of the Respondents have participated in AI programmes at a frequency of sometimes and 20% of students attends the AI program always, while 15% never attended the AI skill program which shows the lack of knowledge among them.

5. How frequently do you use digital and AI tools for academic purpose ?

180 responses

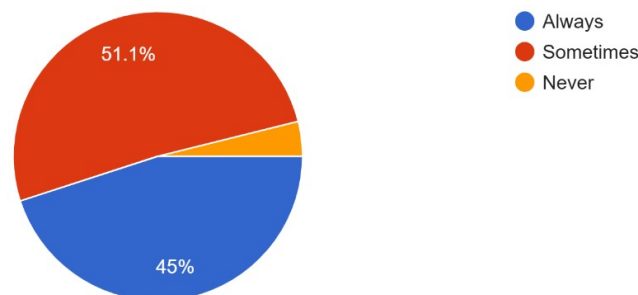


Figure 5: Purpose of AI use

For Study purposes, 51.1% of respondents use AI and 45% of the participants uses AI always for study purpose. This shows how AI is helping the students and also how students use AI. 3.9% of the respondents never used AI for study purposes.

PEARSON CORRELATION

Hypothesis

H₀: There is no relationship between digital skills and career readiness among the respondents.

H₁: There is a relationship between digital skills and career readiness among the respondents.

Correlations			
		digitalskills	careerreadiness
digitalskills	Pearson Correlation	1	.836**
	Sig. (2-tailed)		.000
	N	180	180
careerreadiness	Pearson Correlation	.836**	1
	Sig. (2-tailed)	.000	
	N	180	180
**. Correlation is significant at the 0.01 level (2-tailed).			

The correlation coefficient is $r = 0.836$. The significance value is $p = 0.000$, which's less than the 0.01 significance level. Therefore the null hypothesis (H_0) is rejected, and alternative hypothesis (H_1) is accepted. The findings suggest that final year students, who possess knowledge in digital skills leads to increase in career readiness.

MULTIPLE LINEAR REGRESSION ANALYSIS

Hypothesis

H_0 : Digital skills and AI literacy do not influence the readiness for a career.

H_1 : Digital skills and AI literacy positively influence the ability to prepare for a career.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.936 ^a	.875	.874	1.320
a. Predictors: (Constant), ailiteracy, digitalskills				

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2161.772	2	1080.886	620.744	.000 ^b
	Residual	308.206	177	1.741		
	Total	2469.978	179			
a. Dependent Variable: careerreadiness						
b. Predictors: (Constant), ailiteracy, digitalskills						

Coefficients ^a										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.438	.299		1.462	.146	-.153	1.028		
	digitalskills	.106	.078	.075	1.361	.175	-.048	.260	.234	4.269
	ailiteracy	.858	.054	.869	15.849	.000	.751	.964	.234	4.269
a. Dependent Variable: careerreadiness										

Collinearity Diagnostics ^a						
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	digitalskills	ailiteracy
1	1	2.897	1.000	.01	.00	.00
	2	.087	5.763	.80	.02	.12
	3	.016	13.655	.19	.98	.88
a. Dependent Variable: careerreadiness						

The results show that the regression model is statistically significant ($F = 620.744$, $p < 0.001$). The R squared value of 0.875 means that digital skills and AI literacy together explain 87.5 percent of the changes in career readiness. AI literacy has an effect on career readiness ($\beta = 0.869$, $p < 0.001$). However digital skills do not have an effect, on career readiness ($\beta = 0.075$, $p = 0.175$). So the overall regression model is significant the null hypothesis H_0 is. The alternative hypothesis H_1 is accepted.

V. SUGGESTIONS

- Strengthen AI literacy programmes:** Schools and colleges should give students AI literacy programmes. These programmes should teach the ideas of AI show common AI tools explain how to use AI responsibly and give real examples of AI used in study and job life.
- Provide skills training:** Students need real opportunities to learn digital skills through hands-on practice. They need to practice data analysis, communication, collaborate in virtual environments and to gain knowledge on digital informations.
- Integrate AI into the curriculum:** Use real-world and practical examples, ai related projects and classroom activities can help the students understand the importance of AI in jobs and industries.
- Focus, on training that helps people get jobs:** Digital and AI training should be designed to meet the needs of employers. Students should learn tools and technologies

that are actually used in the jobs they want not just study theory. Training should prepare them for work situations.

5. **Create learning opportunities that're practical:** Schools should hold workshops, projects and activities that use technology. Students can use their AI skills to solve real problems.

6. **Check student's skills regularly:** Colleges and universities should test students digital and AI skills often. This helps find areas where students need help. It also helps schools make programmes, for getting jobs.

7. Encourage students to keep learning; the tools and the AI change quickly. Students need to keep getting better at their skills by taking classes getting certificates attending workshops doing internships and studying on their own.

8. Partner with companies and experts: Schools need to work with businesses and people who understand technology. This helps schools find out what skills are important and then include those skills in their training programs.
9. Make career guidance better: Career development centers should help students understand what digital and AI skills are needed for jobs. This can help students get ready for what employers are looking for.
10. Teach about using AI in a way: Along with learning how to use technology students should also learn about using AI in a responsible way. They should learn about data privacy being accurate avoiding bias keeping honesty and making good choices. This will help them use AI in the way, at work.

VI. LIMITATIONS OF THE STUDY

1. The study is limited to selected respondents and the geographical area covered, so findings may not fully apply to other regions.
2. The study is based on 180 respondents; a larger sample could offer greater variety.
3. The study focuses only on digital skills and AI literacy as predictors, excluding other factors like experience, personality, and institutional support.
4. The study relies mainly on quantitative techniques, which may not fully capture respondents' experiences and opinions.
5. Rapid changes in technology

VII. RECOMMENDATIONS

- Educational establishments should make some sort of compulsory educational programs on digital and AI literacy instead of optional extracurricular ones, so that all graduates complete their studies with the fundamental skills.

- Course developers should design special discipline-related digital literacy courses, as well as computer literacy courses, showing students how to use digital technologies directly in their future professional activities.
- Educational institutions should carry out regular audits of digital skills in various target groups to recognize the gaps and overcome them in the form of special courses (bridge programs) for students.
- Faculty development programmes should be strengthened to ensure educators themselves are equipped to teach and model responsible, critical use of AI tools, rather than merely permitting or prohibiting their use.
- The employability preparation programs should incorporate the assessments of AI literacy and digital skills into their activities so that students can be ready for the changing requirements of employers.
- Institutions should collaborate with the industry and developers of AI tools to create opportunities for students to have practical workshops, internships, and certifications where they can apply the acquired skills in real companies.
- The assessment process should be improved so that the use of AI technologies and tools is accepted into the curricula.
- Procedures at the institutional level should be introduced according to the expectations put under the National Educational Policy.
- Further research should be conducted to extend this study.

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