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# Future Skills and Competency Development in Digital Business Education: A Study with Reference to Tamil Nadu

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**ABSTRACT**

The fast digitalization of the business spaces has dramatically affected the abilities of the contemporary workforce, with more focus on the future development of skills and competencies being transferred to digital business education. The current research paper is going to analyze how digital business education can promote future skills and competencies in students in institutions of higher learning in Tamil Nadu. The research design will be descriptive and analytical, and both secondary and primary data will be used in the study. Primary data were gathered using a structured questionnaire that was distributed to the students and faculty members who are linked to the digital business-related programmes. The secondary data were derived through the scholarly journals, policy documents, and government reports. The data were analyzed with the help of descriptive statistics and inferential analysis. The results indicate that digital literacy, data analytics, critical thinking, ability to solve problems, and adaptability are considered such essential future skills of digital business professionals. The study also reveals a considerable positive association amid the digital business education practices and future development of skills. Nevertheless, the limitations to industry exposure, insufficient practical training, and faculty preparedness in high-level digital tools were mentioned as the significant limitations to efficiency in competency development. The paper will conclude that although digital business education in Tamil Nadu plays an important role in the future skills development, industry integration, modernizing the curriculum, and training faculty are important to improve the outcome of competency. The results can be useful to the policy makers, schools, and curriculum developers in ensuring that digital education of business is kept abreast with the changing needs of the digital economy.

**Keywords:** Future Skills, Competency Development, Digital Business Education, Higher Education.

## 1. Introduction

The development of digital technologies rapidly has changed the global business environment and thus the business education should also change. The trends of digitalization, automation, artificial intelligence, data analytics, and e-commerce platforms have changed the form of work and the skills that the future professional should have. This is forcing institutions of

higher learning to progressively prepare learners to be prepared with future oriented skills and competencies that are not limited to conventional knowledge in the business world. Future skills are a mixture of digital, cognitive, social, and entrepreneurial skills that help people adjust themselves to the shifting technology and organizational environment. The World Economic Forum (2020) demonstrates that critical thinking, problem-solving, digital literacy, creativity, and adaptability are some of the skills that are becoming essential in the digital economy to be employable. Digital business education is important in enhancing these competencies by incorporating technology-enabled learning, experiential learning, and industry-based curriculums. Digital transformation in the Indian context has been heavily reinforced by national policies like Digital India and the National Education Policy (NEP) 2020 which focuses on developing skills, multidisciplinary education and integrating technology in education. As one of the most developed states of India in terms of education and industrialization, Tamil Nadu has made several steps to increase the infrastructure related to digital learning, develop technologically driven education, and increase the level of employability among students.

Digital classrooms, industry-academia partnerships, and programmes based on skills related to the emerging technologies that can be applied in digital business have been experienced in the state. Although this has taken place, there are still issues to address to align digital business education to the future skill demands, especially related to its relevance in the curriculum, faculty readiness, and competency-based assessment. Thus, it is important to systematically explore the level at which digital business education in Tamil Nadu helps in future skills and competency building of students. This paper will aim at analysing the most important skills of the future, evaluating the current practice of the field of education, and pinpointing gaps and opportunities to facilitate the development of digital business education in the state.

## 2. Review of Literature

Future skills have been eminent as a response to technological disruption and changing labor market demands. According to the World Economic Forum (2020), analytical thinking, innovation, active learning, technology use, and resilience are the important skills of the future workforce. On the same note, OECD (2019) also highlighted the relevance of cognitive and social-emotional skills in training learners to operate in uncertain and dynamic workplaces. Grenda (2026) came up with an inclusive model of digital competence which incorporates technological knowledge, soft skills, and leadership skills, contributing their value towards handling and running digital business models. These researches indicate that the skills of the future are multidimensional and should be taught through the integrated method.

Digital business education is centered on the achievement of the skills that involve digital strategy, e-commerce, data-driven decision-making, and the use of technology to start a business. Park and Kim (2025) observed that digital transformation in education improves the entrepreneurial competencies through creating creativity, collaboration, and problem-solving abilities. According to Pelaez-Sanchez et al. (2024) there was a necessity to have competency-based learning framework to match higher education results with Industry 4.0 and Industry 5.0 demands. Skakun (2022) emphasized the importance of educators and digital pedagogy to the competency development and emphasizes that the successful use of digital tools is the key to the creation of future-ready graduates.

Tamil Nadu has also become an active state in the field of technology to promote digital education with both government and non-governmental activities. Digital infrastructure initiatives, smart classrooms, and programmes with STEM have improved access to technology-enabled learning supported by the government. Programs like digital and STEM education efforts by the industry players have helped in building basic digital skills in the students. These programs are in line with the goals of NEP 2020, which promotes competency-based learning, digital literacy and learning that focuses on employability. Nevertheless, the literature of empirical studies of the translation of these initiatives into future skills and competencies in digital business education is limited, which means the identification of a research gap.

Several researchers have explored the idea of skills and competency development in the future in terms of business education and digital transformation. All these studies highlight the increasing significance of the need to incorporate digital, cognitive, and entrepreneurial competencies into the curricula of higher educational institutions. According to Binkley et al. (2012), the 21st century skills are a mix of how to think, how to work, working tools, and living in the world. Their model identifies critical thinking, creativity, communication, and digital literacy as the key competencies of the contemporary professionals. This framework offers a background comprehension on the skills to analyze in the future in digital business education. As stated by Autor (2015), digitalization and automation do not kill jobs but transform them, stimulating the need to be more flexible, possess problem-solving and analytical thinking. In this study, it is argued that the digital business education should emphasize on the development of higher-order thinking in addition to technical skills. The World Economic Forum (2020) states that a future workforce must possess such skills as analytical thinking, innovation, technology design, and emotional intelligence. The report notes that the educational systems should shift towards skills based and competency-based learning systems rather than content-based learning especially in business and management education.

Spöttl and Windelband (2021) analyzed the competency requirements related to Industry 4.0 and discovered that digital, methodological, and social competencies are of critical concern to future professionals. They conclude that business learning institutions urgently need to redesign studying programs so that they could incorporate digital technologies and interdisciplinary learning models. The article by Gupta and Sharma (2021) has examined how digital transformation has influenced management education in India and has discovered that the use of digital tools, online methods, and experiential learning has a great influence in enhancing the employability skills of students. The paper highlights the importance of business education that incorporates digital technology to equip students with the business world that is driven by technology. Sá and Serpa (2020) emphasized the role of soft skills like communication, teamwork, and adaptability in post-secondary education. In their work, they claim that digital learning should facilitate social and emotional skills to consider complete development of skills. In their systematic literature review, Park and Kim (2025) summarized existing studies on entrepreneurial competencies in the digital transformation age and found out that digital business learning promotes creativity, innovation, and opportunity recognition in students. Their results support the significance of the inclusion of entrepreneurship-oriented digital learning models in business education.

The article by Pelaez-Sanchez, Glasserman-Morales, and Rocha-Feregrino (2024) discussed the digital competencies in higher education in the context of Industry 5.0. Their research underlined the necessity of competency-based evaluation and curriculum design according to

the latest technological trends that is quite topical in terms of digital business education. Tilak (2018) studied skill development programs in higher education within the Indian context and highlighted that policy support and the institutional capacity are important in creating graduates ready to face the future. On the same note, the National Education Policy (2020) supports multidisciplinary education, digital literacy, and competency-based education to improve employability. Regional level there are limited studies on Tamil Nadu specifically. Nevertheless, the existing facts indicate that the state initiatives in digital infrastructure, smart classrooms, and programmes connected to the industry have positive implications on skills formation. However, there is little empirical research analysing the efficacy of such initiatives in the framework of digital business education, which means that there is a major gap in research.

### 2.1 Research Problem

The fast-growing digital technologies have contributed largely to changes in business models, organizational processes, and workforce expectations in various industries. The demand of the professionals with the future skills and competencies has been growing as businesses are becoming more dependent on digital platforms, data analytics, automation, and artificial intelligence. Therefore, digital business education has been recognized as a vital part of higher education that would equip students with the developing digital economy. Digital business-oriented programmes, technology-enabled learning, and skills development are the response to the national policies like the Digital India initiative and the National Education Policy (2020) in higher education institutions in India and specifically in Tamil Nadu. Despite this, there is still no empirical evidence as to whether digital business education can develop future skills and competencies in students. There are still concerns in the Applicability of curricula, sufficiency of practical exposure, preparedness of faculty in superior digital tools, and correlation with industry demands.

### 2.2 Research Gap

Based on the literature review, although there is substantial research on the future skills and digital competencies in the global and national level, there is a lack of empirical research in digital business education in Tamil Nadu. It has not been investigated in systematic studies how digital business education helps build future skills and competency and what are some of the challenges institutions have in responding with industry needs. This paper will fill this research gap by offering empirical data in Tamil Nadu.

### 2.3 Research Objectives

1. To determine the skills necessary in digital business persons in the future.
2. To study how digital business training helps to build these skills in the students in Tamil Nadu.
3. To examine issues and prospects in competency building in online business training.
4. To propose the recommendations to enhance the development of digital business education skills in the future.

## 3. Research Methodology

The research design used in the study is descriptive and analytical because it seeks to explore future skills and competency development in digital business education in Tamil Nadu. A structured questionnaire was also used to collect primary data on 120 students studying digital business-oriented programmes on a five-point Likert scale. Academic journals, government reports, and policies documents were used as sources of secondary data. Convenience sampling was utilized because of limitation to accessibility. The identification

of key future skills was done using descriptive statistics and inferential statistics like Chi-square test, correlation, and regression analysis were used to study the association, relationship, and influence of digital business education on future skills and competency development.

## 4. Data Analysis and Interpretation

### 4.1 Descriptive Analysis

The basic characteristics of the respondents in the research are explained using descriptive analysis. It gives data on the demographics of the respondents including gender, educational qualification, and their exposure to digital business education. The distribution of the respondents in various categories is clearly presented by using percentages analysis. This discussion aids in the insight into the history of students and how they are exposed to digital business studies in Tamil Nadu.

**Table 1: Frequency Distribution of the Respondents**

| Particulars | Category | No. of Respondents | Percentage (%) |
|---|---|---|---|
| Gender | Male | 70 | 58.3 |
| | Female | 50 | 41.7 |
| Educational Qualification | UG | 72 | 60 |
| | PG | 48 | 40 |
| Exposure to Digital Business Education | Low | 28 | 23.3 |
| | Moderate | 56 | 46.7 |
| | High | 36 | 30 |
| **Total** | | **120** | **100** |

Source: Primary Data

Interpretation: It can be seen in the table that most of the respondents are male students (58.3%). Most of the interviewees are undergraduates (60%). Almost half of the students (46.7%) are highly exposed to digital business education, which implies that there is a fair degree of exposure to the concept of digital business among Tamil Nadu students.

### 4.2 Chi-Square Test

The association between educational qualification and future skills competency is tested using Chi-square test. The test can be used to determine the difference in the level of future skills development depending on the educational qualification of the respondents.

**Table 2: Chi-Square Test between Educational Qualification and Future Skills Competency**

| Variables | $\chi^2$ Value | df | Sig. Value | Result |
|---|---|---|---|---|
| Educational Qualification & Future Skills Competency | 9.462 | 2 | 0.009 | Significant |

Source: Primary Data

Interpretation: As the significance (0.009) is less than 0.05, educational qualification is significantly related with future skills competency. This means that the magnitude of skill development in the future is different depending on whether the students are undergraduates or the postgraduates.

### 4.3 Correlation Analysis

The correlation analysis is conducted to determine the relation between the various dimensions of digital business education (digital skills, cognitive skills, soft skills, and entrepreneurial skills) and future skills competency in general. The analysis assists in establishing the strength and direction of the relationship. The positive correlation shows that digital business education improvement improves future skills competency.

**Table 3: Correlation between Digital Business Education Dimensions and Future Skills Competency**

| Digital Business Education Dimensions | Correlation (r) | Sig. |
|---|---|---|
| Digital Skills | 0.674 | 0 |
| Cognitive Skills | 0.628 | 0 |
| Soft Skills | 0.592 | 0 |
| Entrepreneurial Skills | 0.651 | 0 |

Source: Primary Data

Interpretation: This implies that there is a positive and significant correlation between all the dimensions of digital business education and the future skills competency as depicted in the table. There is the highest level of correlation between digital skills (r = 0.674), then entrepreneurial skills. This shows that students who are better placed in terms of digital and entrepreneur skills are more likely to have greater skills competency in the future.

### 4.4 Regression Analysis

The regression analysis is to be applied to reveal the impact of the dimensions of digital business education on the future ability of competencies. The digital skills, cognitive skills, soft skills, and entrepreneurial skills are the independent variables in this analysis, whereas the future skills competency is the dependent variable. The findings assist in establishing which dimension influences the future skills development most of all.

**Table 4: Regression Analysis**

| Independent Variables | Beta (β) | t-value | Sig. |
|---|---|---|---|
| Digital Skills | 0.382 | 4.756 | 0 |
| Cognitive Skills | 0.261 | 3.214 | 0.002 |
| Soft Skills | 0.148 | 1.892 | 0.061 |
| Entrepreneurial Skills | 0.297 | 3.968 | 0 |

Source: Primary Data

Interpretation: The outcome of the regression shows that digital business education dimensions explain 54% of the variation in the future skills competency. The digitally skilled category (= 0.382), entrepreneurial skills, and cognitive skills have the greatest influence. There is no statistical significance on soft skills. This indicates that digital and entrepreneurial emphasis in business education is an important measure to boost future competency in skills among students.

**Regression Equation**

Future Skills Competency = $\alpha + \beta_1$ (Digital Skills) + $\beta_2$ (Cognitive Skills) + $\beta_3$ (Soft Skills) + $\beta_4$ (Entrepreneurial Skills)

Future Skills Competency = $\alpha$ + 0.382 (DS) + 0.261 (CS) + 0.148 (SS) + 0.297 (ES)

Where:
DS = Digital Skills
CS = Cognitive Skills
SS = Soft Skills
ES = Entrepreneurial Skills. This equation demonstrates that digital skills are the most influential in terms of future skills competency, then there are entrepreneurial skills.

### 4.5 Findings of the Study

The study results indicate that most students who are taking business and management programmes in Tamil Nadu have a moderate future skills competency. The research established that educational qualification is significantly related to future skills development which suggests that post graduate students have a higher level of competency than undergraduate students. Further discussion reveals that, the correlations between all dimensions of digital business education: digital skills, cognitive skills, soft skills, and entrepreneurial skills and the future skills competency are positive and significant as well. Among these dimensions, the strongest correlation and regression influence is indicated by the digital skills, and their leading role is in the improvement of future skills is observed. The regression findings suggest that the dimensions of digital business education alone indicate a significant amount of variation in the future skills competency. Nevertheless, soft skills are less influential, as compared to other dimensions.

### 4.6 Discussion

The research results indicate that digital business education is essential in determining future skills and competencies in students. Pressing one of the dimensions, digital skills turned out to be the most decisive variable, which means that practical experience with digital tools, platforms, and technologies contributes to the preparedness of students to further professions to the greatest extent. The role of cognitive and entrepreneurial skills is also significant meaning that problem-solving skills, innovation, and business thinking are all significant elements of the further development of competencies. The comparatively low power of soft skills can possibly be explained by the lack of exposure to the teamwork and leadership activities in academic programmes. All in all, the results highlight the importance of incorporating practical digital learning and innovation-based methods into business education as the possible means of empowering future skills in learners.

## 5. Conclusion

The research results indicate that digital business education is essential in determining future skills and competencies in students. Pressing one of the dimensions, digital skills turned out to be the most decisive variable, which means that practical experience with digital tools, platforms, and technologies contributes to the preparedness of students to further professions to the greatest extent. The role of cognitive and entrepreneurial skills is also significant meaning that problem-solving skills, innovation, and business thinking are all significant elements of the further development of competencies. The comparatively low power of soft skills can possibly be explained by the lack of exposure to the teamwork and leadership activities in academic programmes. All in all, the results highlight the importance of incorporating practical digital learning and innovation-based methods into business education as the possible means of empowering future skills in learners.

### 5.1 Scope for Further Research

The current research is also confined to students undertaking business education in Tamil Nadu; therefore, the prospective research can incorporate students in other fields and areas to

obtain a wider range of insights. Future researches can use a bigger sample to improve the external validity of results. Other variables that can be included in the future research include employability preparedness, industry anticipation, making use of technology, and being an oriented learner soon. Comparative research of the students and working professionals may present more insight into the efficiency of digital business education in the evolution of future skills and competencies.

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