Employability In The Digital Age

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Abstract

Digitization has transformed the way we work. Routine tasks and activities with low complexity require little human involvement. A high premium has been placed on dynamic capabilities of employees, bringing to fore the question of employability. Amid this tectonic shift, staying employable is a key concern for the workforce. As a substantial number of jobs today require some form of interaction with information technology (IT) systems, digital literacy has become a crucial skill for employees. In this article we review, synthesise and analyse the literature on employability in the era of digitization. We also identify three key themes that emerge from here- What constitutes as Digital Skills, Why Digital Skills are important for Employability, and How can these Digital Skills be developed to enhance employability. This review article makes a unique contribution to literature by assimilating two strands of literature-employability and digital literacy.

Keywords: Employability, Digital Literacy, Digital skills, Digital Age.

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1. INTRODUCTION

The last few years have seen a tectonic shift towards digitization, transforming the way we work today. Routine activities and low complexity tasks require little human involvement. Instead, a shift towards knowledge-intensive processes and tasks is being observed. While on one hand, this has rendered many jobs obsolete, on the other plenty of new jobs have been created. Without a doubt though, most jobs have changed markedly in terms of what activities and tasks are performed, and more importantly, how they are performed (Bejaković & Mrnjavac, 2020; Joint Research Centre & European Commission, 2019). The COVID-19 pandemic has greatly accelerated this shift to digital transformation. From governments to organizations, everyone has been forced to adopt new operating models. While the outcome of digitization, like all other technological revolutions, is largely expected to be positive (McKinsey Global Institute, 2017), it still brings to forefront the question of employability of the workforce.

The employability concept originated over a century ago, and has since been evolving. Initially, conceptualized as a labour market instrument on a macro-level, it was concerned with governmental policies which aimed at boosting employment (Berntson & Marklund, 2007; Forrier & Sels, 2003). From a political perspective, this has been adopted by governments to address unemployment issues in the labour market via skill development and inclusion schemes (Tymon, 2013). From an educationalist perspective, it is realised by embedding employability into the curriculum (Rothwell, 2015), with the aim of enabling graduates' entry into the labour market. However, the advent of globalisation accompanied a shift in perspective towards meso-level, with

employability largely functioning as an HR instrument of organizations. Companies were compelled to become more agile, more flexible and more adaptable to respond to changes in the business environment. In this situation, employability came to be understood as an organizational concern, in which demand of personnel had to be matched with the supply, at the right time, at the right place and with the right level of competence (Forrier & Sels, 2003; Nauta et al., 2009). Now, amid changing employment contracts (Pruijt, 2013; Soares & Mosquera, 2019), and the emerging gig economy in the digital workplace of today, employability is conceptualised on an individual, or micro-level. The emphasis here is on one's own capability to find a job and sustain that job (Rothwell & Arnold, 2007).

The COVID-19 pandemic has been detrimental for businesses and economies across the world. According to estimates by the World Bank, it has triggered one of gravest global recessions since the second world war (World Bank, 2020). Global unemployment, on the whole, is soaring (International Labour Organization, 2020). The only way to survive this transforming business landscape, and cope with the reverberations of this pandemic is by ensuring that one is equipped with the skills and competencies required to stay employable (World Economic Forum, 2020). A significant number of jobs today require some interface with information technology (IT) systems. Work-from-home, wherever possible, has become customary, and is a trend that is likely to continue in the post-pandemic workplace as well. This requires today's workforce to be well-versed with IT basics. Digital literacy, defined as the knowledge, skills, and abilities of an individual in interacting with digital technologies (Cetindamar Kozanoglu & Abedin, 2020; Stordy, 2015) thus, will be essential for survival in this knowledge economy, irrespective of functional areas and industries. There is a need for the workforce to possess 21st century digital skills instead of just 21st century skills. This is because the digital component is now invariably included in all aspects of a task. So, problem solving requires not just problem-solving skills but in fact, digital problem-solving skills as well. Digital skills are thus an essential component of employability (Van Laar et al., 2019). Innovation capacity and competitiveness of organizations will depend greatly on thedigital skills possessed by its employees (Picatoste et al., 2018). In 2017, G20 member countries agreed to promote development of digital skills as a key aspect of facilitating easy adaption to the requirements of this new digital economy (OECD, 2017).

The 21st century has seen us move slowly but significantly away from the concept of lifetime employment towards that of lifetime employability (Hoffman et al., 2013). In fact, employability is often described as the only job securityof this forever changing business environment (Berntson et al., 2006). Staying employable through this tectonic shift is a key concern for today's employees. In this paper we review, synthesize and analyze the literature on employability in the digital age. Our research aims are a) to review the literature on digital skills/competencies and employability b) extract the digital skills/competencies essential for employability, and c) integrate and systematize the findings. The paper contributes significantly to the research field majorly in three ways. First, it reviews and synthesizes the extent literature on employability in context of digital skills, thereby advancing the body of knowledge.Second, this study utilizes PRISMA framework (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) given by Moher et al., (2009) to identify, screen and select articles. This framework allows us to capture and detail structured insights on a construct, consequently making the article methodologically and academically robust.While digital skills and employability are used as buzzwords, it has been observed that there is a dearth of in-depth studies that discuss this topic systematically. With this article we aim to concretize it into a concept which can help researchers to build on in the future.Finally, this study presents a comprehensive research agenda giving signposts for future scholarship in the area.

The rest of this paper is organized as follows. The methodology followed for this article has been outlined in section 2. We have used PRISMA framework (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) given by Moher et al., (2009) to identify, screen and select articles. The theoretical background of the study has been discussed in section 3. In section 4 we present the findings from our review. The three key themes identified have been

discussed in detail here. The future research agenda has been detailed in Section 6. In the last section, we discuss the conclusion and implications of our study.

2. METHODOLOGY

In this section we outline the methodology for the review of literature using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework (Moher et al., 2009) and general guidelines given by Paul and Criado(2020) for creating literature review articles. We used Web of Science (WOS) and other databases like Google Scholar, ProQuest etc. for finding the research articles. We have followed international best practices for conducting systematic reviews in the area of management to develop this article(Piccarozzi et al., 2018; Rasoolimanesh et al., 2020).
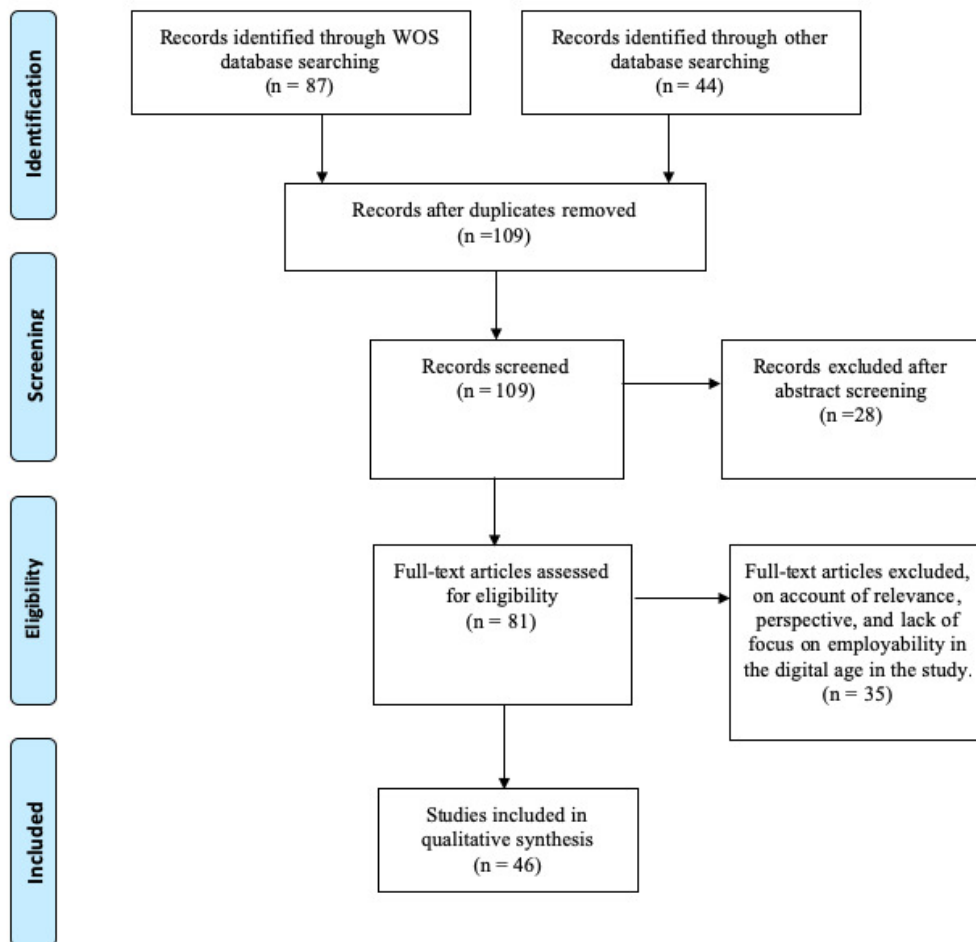
FIGURE 1: PRISMA Framework for Systematic Review (Moher et al., 2009).

In the first step, our search returned 131 records. A *Boolean search*was run on both databases. The search terms that were used were: *employability AND (digital OR technological OR digitisation OR digitalisation OR ICT).* The search query was limited to the English language. With the rising importance of digital skills in the 21st century, and the dominant role that digital connective technologies have played in this century(Saykili, 2019; van Laar et al., 2020a), we have limited our search to the last two decades (2000-May 2021). It was, however, observed that majority of the papers have been published in recent years.

The second step involved removing duplicate records leaving us with 109 records. In the next step,records were screened on the basis of abstract.28 records were removed at this stage particularly because they were missing a skills perspective.The remaining 81 articles were then downloaded. These full-text articles were examined and eligibility for selection was adjudged on the basis of their relevance, perspective, and focus given to employability in the digital age in the study. Studies were considered relevant if they discussed the different digital skills required to be employable in today's labor market. Papers that shed light on the different governmental or institutional or even individual efforts essential for to build a digital workforce were also shortlisted. Articles examining the topic from any of the three perspectives- macro, meso and micro, were included to obtain a comprehensive picture.

To endorse this a focus group was conducted to ensure that aspects of employability relevant to current digital scenario weren't missed out. The focus group was conducted in April 2021 in an online mode, and comprised of six members, two faculty members from reputed national universities, two members from industry and two students. The discussion was moderated by the authors of this study. The focus group emphasised the importance of studying the typology of digital skills, especially the technical and analytical skills required to obtain suitable employment.The importance of digital skills in developing entrepreneurs was also a line of discussion. The different steps taken by employers and educational institutions to make the workforce digitally ready was also identified as a key research area. In keeping with these views, a rationale for selection was developed in addition to criteria specified above.46 papers were selected for this review. This methodology is detailed in Figure 1.

Table 1 presents these top 5 most influential bibliographic sources in the context of employability in the digital age. To demonstrate the credibility of these sources, their Impact Factor has also been provided.

Journal Name	Frequency	Impact Factor
Urban Studies	3	4.663
Higher Education, Skills and Work-Based Learning	2	2.00*
Telematics and Informatics	2	6.182
Economics: The Open-Access, Open-Assessment E-Journal	2	1.234
Employee Relations	1	3.091

TABLE 1: Top 5 Bibliographic Sources.

The different types of articles in the review are as listed in Table 2. Some exemplary papers along with their key principles and content discussed in Table 3.

Types of Articles	Frequency
Empirical	22
Conceptual	15
Review	5
Qualitative	3
Mixed	1
Total	**46**

TABLE 2: Types of Articles.

Primary theme under discussion	Exemplary Papers	Key Principles/ Content Discussed		
Digital competence of students	(Torres-Coronas & Vidal-Blasco, 2015)	Aligning higher education to labour market requirements	Analysing the perception of students and employers in relation to digital competence	Suggest inclusion of the three parties involved – University, students and employers– in the employability process is important for achieving the best results.
Main skills needed in the digital age workforce.	(Gouda, 2020)	Digital age changed the needed skills individuals should hold to become attractive job candidates. Skills in the digital age can be categorized into two groupings: Business Know-how and Digital Know-how(knowledge on the usage of technology and communication platforms and devices)	Managers recruit graduates not only with technical skills, as represented by the degree obtained or the subjects that they took in college, but also with their employability skills: personal skills in business practices and digital media and information literacy.	
Taxonomy of digital skills	(Prezioso et al., 2021)	Build upon a taxonomy of digital skills to explore the diffusion of each digital skill in different departments	Identification of digital skills for every department allow recruiters to acquire the most talented candidates as employees	
Digital literacy as a gateway skill	(Vrana, 2016)	Digital literacy skills are directly related to the concept of employability as digital literacy aims to improve "employability because it is a gate skill, demanded by many employers when they first evaluate a job application"	Universities around the world adapt their study programs according to the needs of the labor market.	Constituting elements of the selected digital literacy definitions- collaboration, computer, context, information etc.

Working in a digital world	(Schech et al., 2017)	Describe a new work-integrated learning model that embeds a multi-layered in- person simulation within an academic context.	Students' reflections on the model indicate that this model can foster a range of generic soft skills that enable them to work in a digital world.	
Digital skills and employment	(Bejaković & Mrnjavac, 2020)	Finds statistically significant correlation between digital skills and employment rates in European Union implying why it is so important for governments and employers to seek, propose and implement new strategies to promote digital inclusion, literacy and the training not only for new ICT professionals but also for the whole workforce.		
Relationship between digital skills and perceived employability	(Lissitsa & Chachashvili-Bolotin, 2019)	Digital skills was positively correlated with perceived employability for the Jewish majority	The positive correlation between digital skills and perceived employability corresponds to human capital theory.	
National level digital skills training programs	(Bode & Gold, 2018)	The G20 should establish national adult training programs that focus on improving workers' general skills, specifically their theoretical, non-cognitive, and digital skills. These general skills will enable workers to work with technology instead of competing with it, thereby increasing their job mobility and employability.	G20 should request comparative periodical reports on all national adult training programs. These reports should be prepared by international organizations specialized in the field, for instance the UNESCO, the OECD or the ILO.	

Employee involvement in digitization	(Cetindamar Kozanoglu & Abedin, 2020)	Measuring digital literacy at the organizational level, showing how various competencies (i.e. Skills and abilities) required for the execution of digital transformations	Expands the discussions on digital transformations to rethink digital literacy as the employee involvement in digitalization.	Digital literacy concept requires not only interactions between employee-technology but also employee-employee through their practice during digital transformation.
Individual involvement in enhancement of digital literacy	(Anthonysamy et al., 2020)	Examines how self-regulated learning strategies can foster the enhancement of digital literacy in digital learning to increase efficiencies in human capital for sustainable development in lifelong learning.		

TABLE 3: Some exemplary papers.

3. THEORETICAL BACKGROUND

Different theoretical frameworks have contributed to the development of the concept of employability and the factors important in determining it. Human Capital Theory (Schultz, 1961), which argues that educational knowledge acquired is essential to increasing an individual's productivity and thereby their workplace success, is one such theory that contributed heavily to the literature on employability (S. Kim et al., 2015; Wittekind et al., 2010). However, in such a fast-moving employment landscape, educational knowledge acquired can soon become obsolete. The neo-human capital theory consequently accentuates the need for developing human capital in response to the increased demand for technology-related skills (Pereira & Malik, 2015).Digital skills have become a necessary requirement for competence and quality of human capital (Grigorescu et al., 2021). Digital skills can consolidate an individual's position in the job market and contribute positively to their employability (Lissitsa & Chachashvili-Bolotin, 2019). Upskilling in the area of technological skills has been deemed as crucial for one's employability (Jaiswal et al., 2021). A digital human capital framework, in this regard, highlights the importance of digital inclusion wherein widespread access to technology is available for all (Bach et al., 2013). This calls for more training that can allow individuals to harness digital technologies for economic, social, and even political ends.

Another framework that has captured the attention of researchers is the social cognitive career theory (Lent et al., 1994) which explicates the role of self-efficacy, outcome expectations and personal goals in career development. It also exemplifies people's tendency to perform better at things where their efficacy beliefs are strong, given they have necessary skills and external support. This is crucial to understanding both the individual and contextual aspects in employability (Qenani et al., 2014). Thus, on an agentic level, acquisition of digital skills can foster strong efficacy beliefs relating to employability. On a contextual level, this implies that the external environment in terms of government, organizational and educational policies needs to support the development of these skills for employability development. From this perspective, employability development can be attributed to self-efficacy beliefs and the learning experience (Liu et al., 2020). It furtherhighlights how career interests develop, how choices are made

subsequently, and how success is achieved.This theory is also capable of predicting outcomes for individuals undergoing a university-to-work transition (Mohd Rasdi & Ahrari, 2020). Employability, as an individual difference variable, determines how an individual makes career decisions, achieves success, responds to job loss, experiences successful job recovery, etc. (Thompson et al., 2017). SCCT is thus, a commonly used approach to support career development and employability (McKenzie et al., 2018).

4. LITERATURE REVIEW

Three key themes emerged from our comprehensive review of literature: What constitutes as Digital Skills? Why Digital Skills are important for Employability? How can these Digital Skills be developed to enhance employability?They are discussed in detail in the following subsections under three heads, What, Why, and How.

4.1 What?

A key theme that was addressed by majority of researchers in their articles was what digital skills and/or competences are essential in today's labour market to ensure employability? Digital literacy constitutes technology related skills and can be defined as one's capability to function efficiently in a digital landscape (Jones-Kavalier & Flannigan, 2006). However, it requires more than just the ability to use digital devices. Sutherland and Ho (2017) emphasise the need for 'digital wisdom' beyond technical skills. Digital literacy involves complete mastery over the digital environment with a mix of sociological, cognitive, emotional and motoric skills (Eshet-Alkalai, 2012). There is a need for socio-emotional thinking on the part of the individual in order to be able to address the different issues (team, communication, etc.) that may arise in a digital work environment (MN et al., 2020). In fact the capability for collaboration, social participation, and problem solving across digital technologies is an essential part of digital literacy (K. T. Kim, 2019).Schlech et al. (2017) in their study found that one needs to alter their interpersonal skills for the digital space when working in a global environment. This is mainly because digital relationships are harder to cultivate and often lack the professional intimacy that can be witnessed in physical spaces.

The key areas in digital competence are information and data literacy, digital content creation, communication and collaboration (through social media etc.), security (to protect personal data), and problem solving (using technology creatively) (Bejaković & Mrnjavac, 2020; Hinojo-Lucena et al., 2019). Researchers have also prepared a framework of 21st century digital skills comprising 7 core skills (Collaboration, Communication, Creativity, Critical thinking, Information management, Problem solving and Technical) and 5 contextual skills (Cultural awareness, Ethical awareness, Flexibility, Lifelong learning and Self-direction) (Picatoste et al., 2018; van Laar et al., 2020b). Mwakatumbula and Moshi (2020) identify six important digital skills for gig workers especially on digital platforms: technical skills, managing information, online communication, critical thinking and problem solving, online safety, e-payment/ banking expertise. Sutherland and Ho (2017)highlight that social media skills should also be considered an integral part of 21st century skills as they increase employability.

Based on this review we find that digital skills essential to employability can be classified under four heads-Operational, generic, analytical and social media. Operational skills relate to use of digital platforms (Deursen & van Dijk, 2010; Li & Hu, 2020) in a secure manner. Generic skills relate to communication, collaboration, cultural etc.skills required to sustain in an online environment. Digital analytical skills can be defined as the skills required to effectively collect and synthesise information, think critically, solve problems, take decisions, etc. Lastly, with the rising importance of social networks, social media skills required to manage social media profiles and create digital content for them have also become an important digital skill (Sutherland & Ho, 2017). This typology is given in table 4.

Puja Khatri & Harshleen Kaur Pahwa

Authors / Dimensions		(Prezioso et al., 2021)	(Bejaković & Mrnjavac, 2020)	(Mwakatumbula & Moshi, 2020)	(Gouda, 2020)	(Hinojo-Lucena et al., 2019)	(van Laar et al., 2018, 2020a)	(Bode & Gold, 2018)b	(Sutherland & Ho, 2017)
Operational Skills	Technical Skill	✓		✓	✓		✓	✓	
	Cybersecurity	✓	✓	✓		✓		✓	
	banking expertise			✓					
Generic Skills	Online communication	✓	✓	✓	✓	✓	✓		
	cultural awareness	✓							
	lifelong learning	✓							
	Self-direction	✓							
Analytical skills	Information Management	✓	✓	✓	✓	✓	✓		
	Creativity	✓					✓		
	Programming							✓	
	Critical thinking	✓		✓			✓		
	Problem solving	✓	✓	✓		✓			
Social media skills	digital content creation		✓		✓	✓			
	social media management								✓

TABLE 4: Typology of digital skills/competencies.

The skill focussed approach to digital literacy, however, has been criticized. In this information age, it's not sufficient that one knows how to look for information. Selecting the right information, synthesizing it and then using to take decisions is a key expectation of employers. Communicating effectively across digital media has also been identified as a key skill that employers actively look for (MN et al., 2020). Moreover, researchers suggest moving towards broader digital competency models. This is primarily because competence-based notions take into effect the progressing nature of digital technologies (Falloon, 2020). Thus, while a digitally literate person may be work-ready today, a digitally competent person will be work-ready at all points in the future.

4.2 Why?
The next theme that emerged from the articles was *Why digital skills have become increasingly important to sustain one's employability in today's landscape*?A focal point of all employability research is knowledge, skills and competencies possessed by an individual (Berntson & Marklund, 2007; De Cuyper et al., 2008; Mäkikangas et al., 2013; Pitan & Muller, 2019; Rothwell & Arnold, 2007). The competence-based conceptualisation of employability given by Van Der Heijde and Van Der Heijden (2006) emphasised the use of skills for acquiring and maintaining employment. Their focus was on both specific (occupational expertise) as well as generic competences (anticipation and optimization, personal flexibility, corporate sense, and balance). Competence based employability models emphasise the need to align one's skill set to market

IJBRM Special Issue - Contemporary Issues and Challenges in Management Research (SIBRM11) : 2022 9

International Journal of Business Research Management (IJBRM)
ISSN: 2180-2165, https://www.cscjournals.org/journals/IJBRM/description.php

requirements. Bejaković and Mrnjavac(2020) contend that employability is highest when individuals possess skills like digital literacy, Information and communication technology (ICT) skills, readiness for lifelong learning etc. The digitally literate will be able to perform work-related tasks better and have a richer learning experience throughout life (Anthonysamy et al., 2020).

Digital skills have been described as central to employability and obtaining employment (Chetty et al., 2018; Gouda, 2020; Lissitsa & Chachashvili-Bolotin, 2019; Vrana, 2016). Green (2017) states that a basic level of digital literacy is now essential for employment. It has been postulated that a lack of such skills negatively impacts productivity, compensation, appraisal, and employment opportunities (Bejaković & Mrnjavac, 2020) etc. in relationship with employability and digital literacy.

Graduate employability has been a key concern for researchers and policy makers in the last few years. Many scholars have focussed their research efforts in this direction and found that digital literacy capabilities are a key concern when it comes to students' employability (Peacock & Bacon, 2018). Digital literacy has been identified as a key competence to prepare them for surviving in the uncertain business environment (Anthonysamy et al., 2020). In a study on marketing professionals, social media proficiency was a skill found to be of great importance to employers (Sutherland et al., 2020). Valdés et al., (2018) conducted a training program wherein students were encouraged to recognise, internalise and utilise the potential of technology in their respective fields of study. It was found that the training program allowed students to improve their employability. In a study conducted by Torres-Coronas and Vidal-Blasco (2015) it was found that the level of digital competence as perceived by students is different from that perceived by the employers, indicating that that employer expectations are not being met.

Digital skills have been identified as crucial not just for employed persons and students, but also the unemployed who are seeking to join the labour force (Mwakatumbula & Moshi, 2020). Sousa and Wilks (2018) in identifying key skills for the future lay emphasis on digital skills as well as agility to adapt to new technology and its consequences. Lestari and Santoso (2019) found digital literacy to positively and significantly influence work-readiness. Since organization's competitiveness and innovation capacity depends on the quality of its employees, employers increasingly look for candidates who are digitally prepared (Prezioso et al., 2021; van Laar et al., 2018). The use of information technologies and digital skills have emerged as key career skills for employability (Andrews & Russell, 2012; Lindsay, 2005; McQuaid & Lindsay, 2005; Soares & Mosquera, 2020; van Laar et al., 2019).

In essence, we find that the increasing importance of *digital skills to sustain one's employability can be attributed to the fact that digital skills a) have become a mandatory eligibility condition for entry into the labour market, b) help develop agility required to adapt quickly to the changes in the labour market, and c) facilitates development of entrepreneurs necessary to drive the economy.*

A list of definitions of Employability and digital literacy have been provided in Table 5.

Author (Year)	Construct	Definition
(Lo Presti & Pluviano, 2015)	Employability	"a personal resource that individuals develop across their working lives aimed at increasing one's own career success, both attaching importance to (i.e., employability orientation) and committing to (i.e., employability activities) making sense of past work experiences and envisioning one's own professional future, acquiring valuable competencies and skills, improving their formal and informal career-related networks, exploring their social environment in search of opportunities and constraints to their own career pathway"
(Pruijt, 2013)	Employability	"empowerment in matters of career development"
(Van Der Heijde & Van Der Heijden,	Employability	"the continuous fulfilling, acquiring or creating of work through the optimal use of competences"

2006)		
(Forrier & Sels, 2003)	Employability	"an individual's chance of a job in the internal and/or external labour market"
(Knight & Yorke, 2002)	Employability	"A set of achievements, understandings and personal attributes that make individuals more likely to gain employment and be successful in their chosen careers"
(Hillage & Pollard, 1998).	Employability	"the capability to move self-sufficiently within the labour market to realise potential through sustainable employment"
(Littlejohn et al., 2012)	Digital Literacy	"the capabilities required to thrive in and beyond education, in an age when digital forms of information and communication predominate."
(Anthonysamy et al., 2020)	Digital Literacy	"the ability and awareness to use emerging digital technologies to perform tasks while demonstrating proper attitude in a digital learning environment"
(Peacock & Bacon, 2018)	Digital Literacy	'the capabilities which fit someone for living, learning, and working in a digital society'
(Jones-Kavalier & Flannigan, 2006)	Digital Literacy	"a person's ability to perform tasks effectively in a digital environment; digital means information represented in numeric form and primarily use by a computer, and literacy includes the ability to read and interpret media, to reproduce data and images through digital manipulation and to evaluate and apply new knowledge gained from digital environments"
(Hidalgo et al., 2020)	Digital divide	"the unequal access to and use of information and communication technologies (ICT)"

TABLE 5: Widely Used Definitions.

4.3   How?

The third theme that emerges from the literature is how can such digital skills be developed in the labour force. With any technological advancement, there runs the socio-economic risk of aggravating inequalities and unemployment. In such situations it is imperative for nations to skill, reskill and upskill vulnerable workers (Lissitsa & Chachashvili-Bolotin, 2019). Governments can aid in this process by providing a framework for implementing such training programs that equip these underrepresented workers with the necessary digital skills (Lyons, 2019). It has also been highlighted that these adult training programs should be aimed at strengthening workers' resilience to such changes in the technological landscape and keep them employable even in the age of digitization (Bode & Gold, 2018). For ensuring human capital readiness, countries must encourage apprenticeships and on the job training to prepare workers for a digital workplace (Mwakatumbula & Moshi, 2020). A collaborative international body can also be set up to advance digital literacy, training and retaining efforts (Lyons, 2019). The responsibility of training also lies with employers. Uber, for example, as part of their recruitment process mandates its drivers to attend digital training (Mwakatumbula & Moshi, 2020). Cetindamar Kozanoglu and Abedin (2020) suggest that by assessing digital literacy levels of their employees, managers can achieve the right fit between employee capabilities and digital technologies that support further digital transformation efforts. Gouda (2020) places the onus on individuals to advance their digital literacy in order to obtain employment.

Since much of the research has been focused on students, a lot of onus has been placed on educational institutions to impart the necessary digital skills to students (MN et al., 2020). Specifically, the role of lifelong learning and self-regulated learning to enhance digital competence cannot be understated (Anthonysamy et al., 2020; Bode & Gold, 2018). Schech et al. (2017) also find that relational skills adapted to digital spaces are paramount for developing global employability and hence must be accorded high priority. Lestari and Santoso (2019) suggest that universities can enhance digital literacy by necessitating collection of information through various digital sources as part of the culture. Following from Norway's example, digital

literacy can also be embedded into a countrywide school curriculum (Belshaw, 2011). Simultaneously, to produce digitally adept, employable graduates, it is important that the curriculum be consistent with market requirements. Authors emphasise the need for all three stakeholders- students, employers and educational institution to be involved in the process of curriculum review (MN et al., 2020; Torres-Coronas & Vidal-Blasco, 2015). In order to align student and employee perceptions of digital competence in the employability process, it is important that all three stakeholders are active participants (Torres-Coronas & Vidal-Blasco, 2015). It follows from here that efforts are required at governmental, educational institution, employer and individual levels to develop these digital skills.

Researchers have also suggested that digital skills may improve employability of workers, but it will have limited advantage a world where training becomes obsolete so quickly (Loh & Chib, 2019). A degree of self-management and pro-activeness (Clarke, 2018; Lin, 2015; Qenani et al., 2014) on the part of individuals is required for favourable outcomes, both economically and socially (Bridgstock, 2009).

Succinctly, digital skills are viewed as a gateway skills to improving one's employability and obtaining sustainable employment (Vrana, 2016). They are comprised of an individual's ability to perform tasks successfully in a digital setting(Jones-Kavalier & Flannigan, 2006; Peacock & Bacon, 2018). Digital skills extend beyond using technology effectively to communicating in an online environment, creating digital content, solving digital problems, managing information, etc. (Bejaković & Mrnjavac, 2020; Hinojo-Lucena et al., 2019; Sutherland & Ho, 2017). To ensure human capital readiness in this digital age, all stakeholders- nation, organization, educational institutes and individuals- have a part to play (MN et al., 2020; Mwakatumbula & Moshi, 2020; Torres-Coronas & Vidal-Blasco, 2015). With collective efforts from all, a digitally ready workforce can be developed.

Papers that cover at least two of the three themes have been given in Table 6.

Puja Khatri & Harshleen Kaur Pahwa

Authors / Themes	(Torres-Coronas & Vidal-Blasco, 2015)	(Vrana, 2016)	(Schech et al., 2017)	(Bode & Gold, 2018)	(Picatoste et al., 2018)	(Sousa & Wilks, 2018)	(Lestari & Santoso, 2019)	(Lissitsa & Chachashvili-Bolotin, 2019)	(Van Laar et al., 2019)	(MN et al., 2020)	(Gouda, 2020)	(Cetindamar Kozanoglu & Abedin, 2020)	(Anthonysamy et al., 2020)	(Bejaković & Mrnjavac, 2020)	(Mwakatumbula & Moshi, 2020)
THEME 1: What constitutes as digital competencies?	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓	✓	✓
Operational Skills	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓	✓	✓
Generic Skills	✓	✓	✓		✓	✓			✓	✓				✓	✓
Analytical Skills	✓	✓		✓	✓	✓			✓			✓		✓	✓
Social media Skills														✓	
THEME 2: Why digital competencies for employability?	✓	✓		✓	✓	✓	✓	✓	✓		✓		✓	✓	✓
Mandatory eligibility		✓			✓		✓	✓	✓					✓	
Agility to adapt	✓			✓		✓		✓				✓	✓		✓
Developing Entrepreneurs						✓									
THEME 3: How to develop digital competencies to foster employability?	✓	✓	✓	✓			✓	✓	✓		✓	✓	✓		✓
Governmental effort				✓				✓							✓
Educational Institution effort	✓	✓	✓				✓				✓		✓		
Employer effort	✓	✓										✓			
Individual effort	✓										✓	✓	✓		

TABLE 6: Key Themes across the Top Articles.

5. FUTURE RESEARCH AGENDA

Through our review, we find that there is a clear dearth of employability research in developing nations (Akkermans & Kubasch, 2017; S. Kim et al., 2015) and especially so in the context of India. There is a need to develop an integrative theory of employability (Forrier et al., 2015). This can be realized with digital comeptence at its core. In this section we detail the possible areas for future research that follow from the themes that emerged in our review. In context to the first theme, **what** *constitutes as digital competencies*, we find there is present a laundry list of digital skills. There were however, very few articles that empirically studied the relationship of digital skills with employability, even less so in the Indian context. We also opine that the digital skills required for people in different professions to be employable can vary greatly, Thus, it may be prudent in the future to define digital skills specific to job domains in order to foster a workforce that is work-ready. Future researchers may direct their efforts in this direction.

With respect to our second theme, **why** *digital competencies for employability*, we propose the following areas of future research. There is a need to align micro-level perspectives with meso-level perspectives. This is to say that, studies that map industry skill requirements with individual perceptions of industry skill requirements are necessary in order to bridge the gap between what is and what ought to be. Such an alignment is also essential at macro and meso levels. Thus, studies that map national level policies regarding skill development and employability with industry requirements and school curricula are requisite, as they will, going forth, determine the quality of our workforce . Qualitative approaches may be used in this context.

In regards to the third theme, **how** *to develop digital competencies to foster employability, we highlight the following areas for future research.*Institutes of learning have a central role to play here as they are responsible for shaping the workforce of tomorrow. Thus, researchers can try to study the different interventions used by educational institutes at both secondary and tertiary levels to adjudge the state of conditions and define a path going forward. A country-wise comparison of these different initiatives may prove to be very insightful for practitioners as well as policy makers. In fact, an institute wise comparison, say for example, Tier 1 institutes vs Tier II institutes may also prove helpful in this regard.

Keeping in mind the evolving nature of work, the individual's role in shaping his own employability cannot be discounted. In this vein, indulging in career self-management behaviours such as self-profiling, impression management, investing in one's social capital, and developing one's human capital (Hirschi et al., 2018)may be fruitful. These career management behaviors and resources are easily transferable to different work contexts and not job-specific in nature. Self-leadership (Manz, 1986), which is an ability of the individual to self-direct and self-motivate can also aid in the development of digital competencies and employability. The impact of career self-management resources and self-leadership in enhancing both digital competencies and employability, thus, must be studied. Interventions that can be employed to enhance these digital and employability at the organizational level must be a key area of concern for future researchers. Researchers may also try to identify other such variables, that can be crucial to development of lifetime competencies and enhanced through intervention like voluntary learning behaviour, protean career orientation, lifelong learning, etc.

6. CONCLUSION AND IMPLICATIONS

This review paper integrates the literature on employability in the digital age. The articles have been selected using the PRISMA framework. In this article we synthesise and analyse the extant literature on employability in the digital age. Based on our review and analysis we have identified the top 5 bibliographic sources and the key themes on which articles are situated in this context: What constitutes as Digital Skills? Why Digital Skills are important for Employability? How can these Digital Skills be developed to enhance employability? Digital literacy emerges as a key skill to be employable in this day and age.

The present day labour market is highly volatile, excruciatingly competitive and fraught with uncertainties.As the workspaces have become more and more connected, employer interest in candidates possessing digital skills has risen (Mwakatumbula & Moshi, 2020). In this changing business environment, employees are especially vulnerable and must be infused with optimism and confidence in self so they don't harbour negativity towards the unstable labour market. In fact, fostering employability is necessarily seen as a joint responsibility of all stakeholders (Pruijt, 2013). This is in line with conceptualisations from SCCT, wherein employability is a function of both personal and contextual factors (Álvarez-González et al., 2017). Thus, enhancing employability of the workforce to equip them for this digital era should be a shared goal for policy makers, organizations, higher education institutions as well as the individuals themselves.

At the government level, effective strategies for ensuring digital literacy for all should be implemented. In India too, such a trend has been witnessed with the term 'employability' making it into key policy drafts. 'Skill India' and 'Digital India' underscores this vision of an employable India in the digital age. The National Education Policy (2020) identifies digital literacy as a fundamental skill for students at both- school and higher education levels. However there still exists a huge digital divide, and employability of the workforce needs to be enhanced.At theeducational institution level, teacher support has been identified as critical for employability development of students (Zhao et al., 2021). More digital-oriented content in teacher knowledge transfer can help students to acquire digital skills that further build their employability. University faculty can also contribute to employability development by organizing employer-matching activities and facilitating practical work experience so that students can get first-hand digital exposure (Álvarez-González et al., 2017). Further, perceived reputation as well as employability promotion by the institution have an influence on the employability of students. This necessitates that educational institutions build a reputation for being a contemporary university adept at equipping students with 21st century skills. The essentiality of teacher and institution support finds its underpinning in SCCT which lays emphasis on external support received for employability development.

At an organizational level, employees must be readily provided with support, advice, and requisite skills, so they develop coping resources, competitive edge and contribute positively to the organization and society. By investing in the employability of their employees, employers will be able to establish their reputation as an attractive employer and boost employee commitment (Pruijt, 2013; Van der Heijde et al., 2018). At the individual level, it is important that appropriate career self-management resources are present. Especially in times of change, perceived threats may become many and confidence in employability can be shaken easily. Individuals, in general, are not sensitized to accept or handle failure. It has become imperative to equip them with the ability to lead themselves through adversity and towards success. Career self-management is crucial to career resilience (Despina et al., 2015). Self-managers will be able to take their own decisions and carve their own career path in the corporate world.

Thus, a focus on digital competences and abilities is irrefutably essential in employability literature in this age of digitization. Further, sustaining employability in this digital era asks for a more self-reliant approach. Sustaining employability now depends on how well one manages the career resources. As the age-old adage goes- "Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime." Similarly, employability can only be truly fostered by investing in their digital literacy, and sustained by developing the career self-management resources of the employees. By providing a support mechanism, organizations, governments and universities can thereby facilitate the journey of the workforce towards sustained employability in this digital landscape.

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