

Information Literacy and the Digitalisation of the Workplace

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Information literacy competencies for career transitions in the digital age

1 Introduction

The digitalisation of society is an issue subject to scholarly attention (e.g. Tsekeris, 2018; Valenduc and Vendramin, 2017, pp. 2-4), particularly in respect of its reshaping of economic, political, and cultural landscapes, including the transformation of work (e.g. Toven-Lindsey, 2017). For example, it is now possible to delegate decision-making for workplace practices such as hiring, training and onboarding to non-human entities and ‘algorithmic bosses’, and work placements can be reconfigured into an online format (Beer, 2017; Duffy, 2020, 103; de Haas et al, 2020). While workplaces are subject to continuous change and pressure to innovate (Oeij et al, 2019), automation and alterations to the spatiotemporal organisation of labour also impact individual work experiences (Hoskyn et al, 2020; Kingma, 2019; Gill, 2020, 146).

In addition to the challenges associated with working within such an environment, many workers face considerable job precarity: an increased experience of inequality and insecurity accompanied by the destabilisation of institutions (Kwon & Lane, 2016, p.10). Job precarity has grown steadily since the 2008 financial crisis, and has led to the development of multiple anti-precarity agendas that call for an improvement of working conditions through trade union and government engagement (Paret, 2016, p. 111). When employers no longer offer job stability and/or vertical progression opportunities to their employees, working trajectories can become disassociated from the identification of a single career for life (Rodrigues and Guest, 2010). Thus individuals need to be prepared to navigate a number of career transitions across their working lifespan (Bezanson et al, 2016; Lyons et al, 2015; Todoli-Signes, 2017).

Attitudes to work are also changing in ways which may prompt voluntary career mobility, and necessitate an increased preparedness for managing changeable career pathways. In pursuit of a better work-life balance, greater job satisfaction, and career advancement opportunities, many workers seek more fulfilling work (e.g. Chan et al, 2020; Kidd, 2008). This trend has been especially pronounced in recent years. For example, the COVID-19 pandemic has prompted a global phenomenon known as ‘the great resignation’, whereby large numbers of workers resign from their jobs in protest of poor working conditions (Sheather & Slattery, 2021, p.1). In addition, those born after 1995 (also known as “Gen Z”), have specific expectations of organisational culture, work-life balance, and job stability. Of note, they ascribe meanings to the term ‘stability’ that are different from that of earlier generations: to them stability is not concerned with job tenure within a specific organisation or profession, but with financial rewards such as competitive salaries and job benefits (e.g. Barhate & Dirani, 2021, *forthcoming*). At the same time, this generation is strongly motivated by learning and skills development, and may pursue lateral career moves over hierarchical career moves, especially if these provide ample learning and mentoring opportunities (e.g. Barhate & Dirani, 2021; McCrindle & Fell, 2019, p.23).

As a consequence of these developments, employability is no longer a matter of securing employment following formal education. Rather, it is a matter of managing transitions, and of remaining agile in response to industrial and occupational demands over time (Meijers et al, 2013). It has been suggested that this can be addressed when individuals proactively navigate the world of

work, self-managing the process of building their careers by applying problem-solving and entrepreneurial skills (Bridgstock, 2019, 34; Buheji and Buheji, 2020; Bufquin et al, 2021). Others have argued for notions of lifelong and sustainable employability to be incorporated into the employability discourse (Goldstein, 2016, p.92; van der Klink et al, 2016).

More specifically, various skills and competencies have been proposed as means to address the challenges of working in information-intensive, digitised, and dynamic work environments. These include: digital working competencies (Meske and Junglas, 2020, p. 5); digital literacy (Bejaković and Mrnjavac, 2020; Vrana, 2016); and workplace information literacy (Hepworth and Walton, 2013; Williams et al, 2014, 1; Zhang et al, 2010, p. 721). However, while the development of skills such as workplace information literacy can be associated with processes that facilitate organisational productivity (e.g. Wu, 2019), it is important to make the distinction between skills for work and skills for employability. This is because the vitality of developed economies is dependent on the flexibility and productivity of the labour market, as well as on the extent to which labour and human capital is utilised within them. Inequality, unemployment, skills mismatch, and skills underutilisation all affect the ability of individuals to obtain and maintain work, and have direct implications for the availability and uptake of labour in global economies (e.g. Helpman et al, 2010; McGuinness et al, 2017). For this reason, the conceptual framing of information literacy as related to work should extend beyond the physical boundaries of a single workplace.

This principle has been acknowledged in the use of the term ‘professional information literacy’ in prior work to represent the collective information skills of groups of employees who work in different organisations, yet all share the same goal for enhancing their professional development (e.g. Abdi and Bruce, 2015). Similarly, the need for individuals to be equipped with information literacy to navigate fragmented and precarious post-industrial labour markets from workplace to workplace has previously been identified (Crawford and Irving, 2014). However, it is only recently that employability literacy and career information literacy have been distinguished in the literature and labelled as such (e.g. Milosheva et al, 2021).

As an extension to workplace information literacy, employability information literacy takes into account the wider labour market in which workplaces operate (e.g. Bušelić and Zorica, 2018). It is most readily associated with the graduate employability agenda: the focus of much of the literature on employability information literacy relates to the preparation of university students for employment following graduation. In contrast, career information literacy is concerned with career decision-making and lifelong career development (Milosheva et al, 2021). This is because ‘career’, in general, is a much broader concept than ‘employability’. Employability should not be conflated with notions of inclusion, social justice, or career, nor should labour market power be equated to the obtainment of formal qualifications (e.g. Atkins, 2013). To be strong contenders on the labour market, workers need to be able to manage their career pathways effectively. Such management entails nuanced understandings of career pathways, achieved through career identity formation and knowledge of opportunity infrastructures (Higgins et al, 2010, p.23).

In this chapter, manifestations of work-related information literacy beyond the single workplace are provided, with a focus on the importance of employability information literacy and career information literacy to sustainable employment in largely digitised work environments. Here the two key terms are deployed as noted below:

1. *Employability information literacy* is an employability competency that enables people to seek jobs, and to communicate their information literacy skills to future employers. To date,

this type of information literacy has been articulated as a graduate attribute that facilitates university-to-work transitions.

2. *Career information literacy* is a competency for career transitions in the digital age that facilitates career decision-making at multiple transition points throughout the life span. Career decision-making is achieved through the development of knowledge of the self and the world of work.

First in this chapter, two main forms of employability information literacy – generic and subject-specific – are reviewed, with attention drawn to the narrow graduate employability focus of the concept of employability information literacy. Next, the concept of sustainable employability is discussed, and perspectives on lifelong career development and self-management are reviewed. The notion of sustainable employability is used to illustrate global trends within the changing employability landscape, and to elucidate the important role of career information literacy skills within this. The main focus of the remainder of the chapter falls on career information literacy. This incorporates competencies from three skills clusters: (1) career management skills; (2) digital career literacy skills, and (3) career information literacy skills. The convergence and divergence of emphasis across these skill clusters is considered, and suggestions for refining the conceptualisation of career information literacy are presented.

The chapter concludes with an overview of best practices and potential innovations in the development of employability information literacy and career information literacy. The themes of skill transferability and transition are regarded as central themes to discussions of employability information literacy and career information literacy. It is proposed that greater advocacy for information literacy training is needed in the workplace as a way of scaffolding continued competence and operational efficiency in workers and in graduates who are commencing employment for the first time. Suggestions for supporting career information literacy in practice are also provided, with an emphasis on hybrid career education and multi-institutional support. It is concluded that career information literacy has the potential to enable career transitions across precarious and digitised career environments.

2 Employability information literacy

Discussions of employability information literacy in the published literature generally link the themes of information literacy and the employability of new graduates, showing strong interest from universities (Barkas and Armstrong, 2021; Christie, 2017). Research on this theme typically reports the embedding of transferable information literacy skills into the curriculum (alongside other employability skills) to demonstrate the contribution of libraries to the development of graduate attributes (e.g. Johnston, 2010; Smith and Edwards, 2012). Significant amongst these initiatives in higher education is the graduate employability lens added to the SCONUL ‘Seven Pillars of IL’ model, reflecting the importance of information literacy for graduate employability purposes (Goldstein, 2015).

Such initiatives are often led by academic librarians. For instance, Towlson and Rush (2013) endeavoured to develop a graduate licence of employability information literacy skills by mapping common information literacy and employability skills against the skills developed by librarians and learning developers at De Montfort University. They found that self-management skills, ICT skills, metacognition skills, academic study skills, and information literacy skills were already being

developed in students, and that further instruction in teamworking, business awareness, media literacy, problem-solving, and communication was necessary.

The reason for the strong participation of librarians in this work on employability information literacy is their historical ownership of information literacy instruction (and its predecessor 'user education'). The inclusion of librarians here also accounts for the first of the two types of employability information literacy skills found in the literature: generic employability literacy skills. These are skills that can be aligned to conventional bibliographic training for effective library use, such as organisation of information, resource discovery, searching strategies, and critical evaluation strategies (Fiegen, 2011). In information literacy instruction tasks set by librarians, students complete assignments that will: prepare them to seek information on jobs and employers; help them complete job applications; and teach them about social media use for professional purposes, with an emphasis on reputation management (Oakley, 2013; Woods and Murphy, 2013, 156).

Other partnerships for this kind of work are struck between librarians and academic staff (e.g. Farrar et al, 2007; Monge and Friscaro-Pawlowski, 2014), academic librarians and librarians within business organisations (e.g. Waters et al, 2012), and academic librarians and university careers advisers (Hollister, 2005). Thus employability information literacy is a shared objective across numerous institutions with an interest in graduate employability. This interest is expressed through quantitative skills measurement, formal instruction, and the development of specialised courses and qualifications, with the goal of developing tangible graduate attributes in university students (e.g. Boden and Nedeva, 2010, p.50).

The second type of employment information literacy – subject-specific employability literacy – comprises the teaching of subject-specific skills as preparation for work in a specific industry or occupation (Klusek and Bornstein, 2006). In designing instruction of this nature, the importance of information literacy skills to the domain is established through analyses of its presence in job information (e.g. in advertisements), or directly from employers through interview (Gilbert, 2017; Head et al, 2013). The results of these analyses are matched against existing employability information literacy provision on degree programmes, and then subject-specific employability information literacy curricula are developed/enhanced for embedding into modules/courses. Degrees that lead to employment in information-intensive business occupations benefit most from this approach. This is because they fit most readily with the skills articulated in competency standards developed for higher education, such as the US Information Literacy Competency Standards (Conley and Gil, 2010).

The generic employability information literacy skills as described above readily facilitate study-to-work transitions, whereas subject-specific employability information literacy skills are more focused on the skills required for a particular workplace setting. However, there is one key issue in the conceptualisation of both types of employability literacy skills: they are concerned exclusively with graduate employability, and therefore the importance of attending to work-to-work transitions and adult literacies is overlooked. Matters such as adult employability literacies and skills continuity across different contexts do not receive the same amount of funding, institutional support, and attention as graduate employability literacies. To date, only one exception to this can be found in the literature: Crawford and Irving's (2012) report of the provision of information literacy instruction in public libraries. Targeted specifically at citizens who are at risk of long-term unemployment or digital exclusion, this type of instruction includes training in computing skills and job-seeking skills (Crawford and Irving, 2012, p. 80).

Crawford and Irving's work in this area is significant because these scholars address the challenge of managing one's career within digitised and precarious working environments. Yet their reported intervention represents a single, short-burst initiative with localised impact, in which only basic information literacy skills were taught. More can be done to support career management in the digital age through information literacy.

3 Sustainable employability

It has been noted that the shift to precarious labour markets, underpinned by principles such as volatility, uncertainty, complexity, and ambiguity, has been accompanied by an increase in social instability and injustice (e.g. Bone, 2020). As a result, social justice narratives feature in the literatures of career development, and of librarianship, in respect of sustainable employability, and emancipatory modes of career guidance have emerged as antitheses to neo-liberal and normative regimes of injustice (Hooley and Sultana, 2016; Saunders, 2017; Sultana, 2017). Career development scholars have critiqued the state of the labour market, contending that workers are faced with precarity to the point of absurdity, and that the free market offers a false vision of choice, freedom, and flexibility (Southwood, 2017). They have also reflected upon the erosion of working practices, and emphasised as an aspirational goal and basic human right the importance of 'decent work' (Blustein et al, 2016), i.e. work that is stable and secure, and associated with appropriate remuneration, community cohesion, and strong trade unions (Blustein, 2019).

Within these social justice narratives, it is argued that there is a need to promote *sustainable employability* throughout working lives, and to ensure a sense of continuity, contentment, and progress in workers' experiences of career transitions and work (e.g. Fleuren et al, 2016). Vocal proponents of fair work and sustainable employability, such as Sen (1987) and those inspired by his work (e.g. van der Klink, 2016) contend that work should create value for the worker, and not just the organisation. Related to this discourse are critiques of the de-politicisation of higher education, which inhibits the democratic potential of education, and models future employees after employer standards, leaving little room for employers to consider employees' expectations of their place of work in return (e.g. Clarke, 2012, p.289). As a consequence of neo-liberal education policy, employability training becomes a commodity which does not live up to the promise of sustainable employability.

Work creates value for the workers when it is personally meaningful, congruent with their values, and allows them to achieve their personal goals (van der Klink, 2016). This suggests that societal and organisational structures should allow for the exercise of personal agency and choice in respect of employment. Indeed, while external structural influences exert influence on individual outcomes, and advocacy for fair and secure work is crucial, modern employability discourses tend to emphasise the importance of entrepreneurialism and individual responsibility over structural thinking and systemic change (Soffriti et al, 2020). Complex negotiations between global issues and local identities are to be conducted through reinvention of the self, termed as 'se faire soi', i.e. 'make yourself' (Guichard, 2009) and 'career construction' (Savickas, 2013). By this logic, the responsibility for career progression resides, ultimately, within the individual. Sustainable employability is achieved not through institutional policy, but through self-constructed meanings of career.

While the development of societal structures to support decent work and the reduction of work precarity is a main priority for reducing injustices in society, self-management serves an important function. At a time of job precarity, career self-management allows individuals to carve dignified and

empowered lives for themselves during career transitions (e.g. Sultana, 2014). Such self-management is dependent on an individual's ability to articulate their career intentions and to position them within available opportunity structures, and occurs in a continuous manner throughout the lifespan (e.g. Savickas et al, 2009).

The importance of attending to lifelong career development and facilitating individual empowerment during career transitions has been recognised in other research areas beyond career development, including information literacy. Information literacy is relevant here as a key competency for personal effectiveness across many aspects of life, not limited to work, e.g. education and leisure. Indeed, "information literacy is for life, not just for a good degree" (Inskip, 2014, p. 1; Webber and Johnston, 2014, p. 15), and employability is an important part of the information literate life-course. However, graduate employability (as described earlier in this chapter) represents only one form of career preparedness. Digital working competencies, career decision-making, adult literacies, and skills to support the information literate life course could be further integrated into employability literacy discourses.

Within increasingly dynamic, fragmented, and digitally mediated career trajectories, *learning about career options* is of paramount importance (e.g. Smith et al, 2018). The possession of adequate knowledge of available career options is one of the pillars of self-directed career development, hence individuals are advised to carry out career research and planning rather than to leave their career choice to serendipity (Pennington et al, 2013, 9). The provision of career information to individuals is one of the key means by which such knowledge can be developed (e.g. Sampson et al, 2018).

There is therefore a natural fit between information literacy skills and career development processes, as exhibited in initial research on career information literacy and digital career literacy, conducted in response to the challenges of job precarity and digitalisation (e.g. Zalaquett and Osborn, 2007; Hooley, 2017). In order to unify disparate ideas pertaining to digital career literacy and career information literacy, the remainder of this chapter explores prospects for further development of the concept of career information literacy.

4 Career information literacy

Considerable skills are required to manage career information as part of career development processes. When attempting to make informed occupational, educational, and training decisions, individuals need to be able to interpret the career information available, and interrogate it in an effective way (e.g. Hooley, 2017; Longridge et al, 2013, p. 6). Furthermore, since career information is commonly disseminated through information and communication technology (ICT), skills in accessing digital career services and managing digital career information are also required (Bimrose et al, 2015). Taking into account the destabilisation and digitalisation of working lives, three clusters of career competencies are posited as central to the development of career resilience:

- (1) Career self-management skills (or simply, career management skills), which relate to the development of lifelong career development skills in citizens (e.g. Akkermans et al, 2013). These skills incorporate a wide range of competencies not limited to the ability to handle digital or career information.
- (2) Digital career literacy skills (or 'digital career management'), which are/is concerned with the skills and knowledge needed to use online sources for career purposes, following Hooley (2012, p.3).

Digital literacy differs from information literacy as its primary focus is on digitally mediated career information, rather than on other types of engagement with career information.

(3) Career information literacy skills, which can be framed as career information competencies that support career decision-making and career development learning by drawing on prior work by Lin-Stephens et al (2019), Milosheva et al (2022, in press), and Zalaquett and Osborn (2007). Career information literacy is a holistic concept that encompasses all forms of engagement with career information, including social modes of career learning (e.g. Arur & Sharma, 2022).

While prominence of different capabilities is given within these three clusters, there are still multiple points of convergence between them. This is evident in Table 1 below where conceptual overlap between the skills profiles for each cluster is presented. These overlaps have implications for the means by which these skills could be represented in academic narratives and developed in practice. By analysing the extant literature thematically, the following patterns can be recorded:

1. Information skills, social skills, and self-regulated learning competencies are present in all three clusters. Skills that refer to learning about the self and learning about the world of work can be found in both the career self-management and the career information literacy clusters. Information literacy is not listed as a career management skill, yet the information skills found within the career management skill cluster resemble those articulated as part of the digital career literacy skillset.
2. In addition to the production of information and the use of information systems, digital career literacy skills also include the management of one’s online presence. Hooley’s seven C’s of digital career literacy – changing, collecting, critiquing, connecting, communicating, creating, curating – appear to be a blend of traditional information literacy skills for information seeking, as well as career management skills and digital literacy skills (Hooley, 2012).
3. Career information literacy incorporates the informational aspects of several of the self-management tasks that are articulated as part of career management skills. For instance, Valentine and Kosloski (2021) developed a classification of fifty career literacy skills using the Delphi method. This skills classification incorporates some career self-management skills, and represents the most comprehensive assemblage of career information literacy skills to date. Nevertheless, digital career literacy skills were not included in Valentine and Kosloski’s (2021) skills classification, and are not currently incorporated within the career information literacy literature more broadly.

Table 1. Career self-management skills, digital literacy skills, and career information literacy skills

Career self-management skills	Sources
<ul style="list-style-type: none"> • <i>General</i>: Life skills, meta-competencies, work readiness skills, personal management, skilful practices relating to academic endeavour, employment, and life, transversal competencies • <i>Information</i>: developing and presenting information, understanding information systems • <i>Planning</i>: career planning, problem solving, personal management, organisational skills, goal-setting • <i>Learning about the world of work</i>: self-regulated learning, horizons (exploring the world of work, training, and learning career exploration, person–environment fit); work exploration (exploring behaviour), career action (proactive behaviour), work exploration, academic skills, understanding of disciplinary subject matter 	Akkermans et al (2013); Hooley et al (2013); Knight and Yorke (2003); Kuijpers and Meijers (2012); Skills Development Scotland (2012); Succi and Canovi (2020); Sultana (2021); Sung et al

<ul style="list-style-type: none"> • <i>Reflection and knowledge of the self</i>: career reflection, reflection on qualities, self-profiling, self-awareness, self (understanding personality and interests), strengths (knowing how to use talents and skills), learning through reflection, reflective behaviour • <i>Social</i>: social skills, social competencies, interpersonal skills, leadership skills, teamwork, negotiation skills, networking, networks (identifying who can help you, and how), networking (interactive behaviour) 	(2013); Zinser (2003)
Digital career literacy skills	Sources
<ul style="list-style-type: none"> • Keeping a digital record of personal development and reflecting on progress (e.g. digital career portfolios) • Technical skills needed to use computer applications • Maintaining a digital identity and knowing what information to share online in order to enhance employability • The seven C's of digital career literacy – changing, collecting, critiquing, connecting, communicating, creating, curating 	Bennett and Robertson (2015); Goe et al (2018); Hooley (2012); Kaeophanuek et al (2018); Martin and Grudziecki (2006); Riel et al (2012); Willis and Wilkie (2009)
Career information literacy skills	Sources
<ul style="list-style-type: none"> • Self-assessment, career searches, career information, and job preparation; • Functional, interactive, and critical skills a student needs to be able to read, understand, and make decisions on career-related information; • Generic, situated, and transformative skills (mapped against self-awareness, opportunity awareness, decision-making, and transition learning domains). 	Lin-Stephens et al (2019); Valentine and Kosloski (2021); Zalaquett and Osborn (2007)

Overall, on the basis of the available evidence, it can be inferred that information skills (in general) are an essential part of career self-management. However, only information skills relating to the production of information and the use of information systems have been considered as part of the career self-management discourse. There are multiple opportunities for further conceptual specialisation in this regard. One opportunity is to expand the description of information skills within the career management skills matrix. Here, information literacy skills relating to the access, use, and evaluation, (i.e. beyond the production of information outputs), can be added to the 'information' cluster. In addition, digital career literacy and career information literacy may be merged in a new meta-concept retaining either the designation of 'digital career literacy' or 'career information literacy'.

Whether information literacy and digital literacy are competing or complementary concepts, two separate entities, or constituent parts of the same concept of meta-literacy is subject to debate (Cordell, 2013; Jacobson and Mackey, 2013). In a digitised world, however, it is difficult to imagine a clear segregation between the two concepts. With more career services are delivered online, the digitisation and automation of work are pervasive phenomena that are not happening 'out there' but 'here and now' (Hirschi, 2018; Chinyamurindi and Dlaza, 2018, p.1). Thus it might be assumed that all literacies *do* have a digital aspect.

Following this line of reasoning, there is an opportunity to conceptualise career information literacy as a competency for informed career management in the digital age. Framed in such a way, career information literacy encompasses the skills included in the digital career literacy competency cluster. In addition, it contributes to the advancement and popularisation of information skills within career self-management processes, and responds to the need for promoting sustainable employability for citizens. The interrelationships and proposed specialisation of existing concepts is further depicted in Figure 1. Here, information competencies are highlighted as crucial parts of career self-management. Digital career literacy is nested as an integral component of career information literacy.

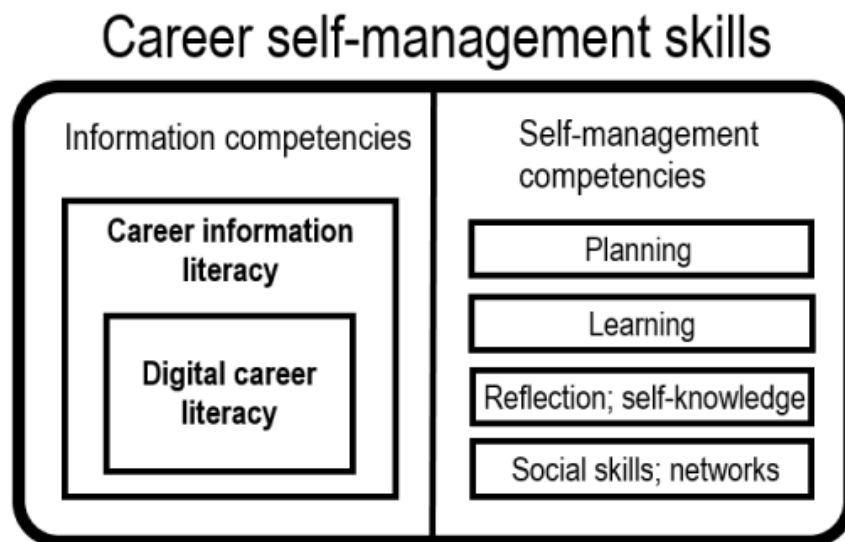


Figure 1. Career information literacy and digital career literacy relative to career self-management skills

5 Supporting employability and career: best practices and new directions

5.1 Employability information literacy – is skills transferability possible?

Multiple successful employability interventions have been reported in the information literacy literature, with specific reference to the effectiveness of interventions deployed in university libraries (e.g. Fiegen, 2011; Frisicaro, 2014; Mawson, 2018; Oakley, 2013;). Yet the general usefulness of subject-specific employability literacy skills beyond the education setting is questionable due to the difficulty of transferring information literacy skills from one context to another. In general, it has been noted that school-to-work, classroom-to-classroom, and school-to-university transitions of information literacy skills are difficult to achieve (Lloyd, 2011, p. 284). Upon entering the workplace, more specifically, recent graduates encounter several challenges. These include vaguely defined workplace tasks, limited or poor feedback, and collaborative working arrangements, and - as a result of these challenges - employer expectations are not ordinarily met at the onset of employment (e.g. Hahn and Pedersen, 2020; Head et al, 2013, 4; Lundh et al, 2013).

While little is known about information literacy transitions across the lifespan, and particularly, education-to-work and work-to-work transitions (Markless and Streatfield, 2007), there is ample evidence that the differences between education and work settings are stark, and skills transferability between them is likely to be limited. The main issue is that the rather artificial 'practising' of employability information literacy skills in an educational setting cannot replicate the reality of information handling in the workplace. Information literacy performed at work is rarely the product of proficient searching by a single individual to meet a defined information need in the form of textual information held in a particular document, as might be the task for a conventional university assignment. Rather information needs, sources, and practices in the workplace are more diverse and complex, and not usually solved through adherence to a linear process of information search and retrieval by one person (Abram, 2013; Bruce, 1999; Crawford and Irving, 2009, p. 29; Hepworth and Smith, 2008; Kirton and Barham, 2005; Lloyd, 2005, 235; O'Farrill, 2008).

This issue of transferability is further underlined in the findings of empirical work on information literacy outcomes where study participants are both students and practising professionals in their field. Here they exhibit information literacy outcomes more typical of the workplace setting than of the education setting (D'Angelo, 2012). This is because learners in work settings understand and practise information literacy not only from their perspectives as students, but also as employees and future professionals (Sharun, 2021). Thus exposure to the workplace is vital in ensuring information literacy skills transferability across different settings. Indeed, according to the environment habit theory of work, work experience and learning are efficient only to the extent that the learning environment replicates the subsequent working environment (Prosser and Quigley, 1949). By extension, workplace training is the most effective method for skills development in the workplace (Oviawe et al, 2017), including information literacy skills.

There is thus a case for further underscoring the importance of information literacy training in organisations, and demonstrating the added value that information literacy skills can bring to the workplace. Two prominent conceptualisations of added value exist in the literature, and can be used to support advocacy: *compliant/routine* and *inventive/innovative* information literacy (e.g. Collard et al, 2017). In the context of workplace practices, the former type of information literacy safeguards against social, legal, financial, and medical risks, and contributes towards evidence-based practice (Forster, 2017; Partridge et al, 2010). The latter is invoked in the development of new products, processes, and services (D'Angelo, 2012, p.639). Information literacy is one of the key informational determinants underpinning workplace learning and knowledge generation (Middleton & Hall, 2021); thus if innovation is an organisational goal, investment in information literacy training is likely to lead to tangible returns (Cheuk, 2008). If the limits of information literacy training in higher education are indeed recognised, and skills are scaffolded through continued training in industry, then the true strategic and sustained potential of information literacy may be unlocked.

5.2 Career information literacy – from skills transferability to transition

A different perspective on skills transferability is offered by career information literacy when this is framed as a competency for career transitions in the digital age. This represents a viable alternative to transferring educational information literacy skills to the workplace setting – a challenge that has proven to be arduous. It also provides recourse from focussing solely on school-to-work transitions, which only partially fulfils the promise of developing an employability or career agenda for the information literate life course. In recent years, the notion of *transition* has gained traction within information literacy discourse, and shows great promise in supporting on-going efforts to link

graduate employability literacies and adult literacies through a consideration of the role of information literacy in sustainable employability, self-management, and career decision-making.

Transition, as a concept in information literacy scholarship, is relatively novel. Yet some granularity is already evident in its articulation. Hicks (2021), for example, indicates that the processes of deploying information literacy skills to navigate changes (such as career transitions) are socially situated and complex. Hicks' work builds on earlier studies that demonstrate the need to become accustomed to the socio-cultural determinants of transitional settings during periods of change, and to be familiar with the key social and material affordances within those settings (Lloyd et al, 2013, 18-19). In the literature of forced transition and refugees' information practices, transition is understood to be a socio-cultural phenomenon, where 'learning as becoming' entails the embodiment of the site-specific systems, practices, and cultural values of a given setting (e.g. Hicks, 2021; Lloyd et al, 2013, 18-19; Penuel et al, 2016). Transition, therefore, is an important challenge within everyday settings, and needs to be managed effectively through the enactment of specific information literacy practices which mitigate risk, maximise personal success, and facilitate inclusion in new communities (Hicks, 2019, pp. 1-5). Managing crises and moving from one mode of being to another requires that mental and behavioural adjustments take place through three main stages: understanding, negotiating, and resolving (Ruthven, 2021, pp.586-590).

When applied to career development, transition may help elucidate the means by which transitional career landscapes are navigated at multiple points across the lifespan. As evidenced in Willson and Given's (2020) paper on the career transitions of doctoral students into early career academics, career transitions are complex endeavours, in which impactful decisions need to be made through the utilisation of appropriate information behaviour. The authors of this paper explore the information behaviours of early career academics, establish linkages between affective experiences and specific information behaviours, and discuss patterns of information avoidance (Willson & Given, 2020, p.4). Information avoidance can be reduced through information literacy training (Karim et al, 2019), hence there would appear to be a clear benefit of developing career information literacy competencies to facilitate career decision-making during career transitions.

The utilisation of seminal work in Career Studies can provide further explanation of transitional effects in career development. Adams et al's (1976) model of transition, Nicolson's (1990) transition cycle, and Williams' transition cycle (1999) are some examples of such work. In each of them, multi-phase transition pathways are presented. Adams et al (1976) further supplement their model with a transition typology, in which four types of transitions are discussed: predictable-voluntary; predictable-involuntary; unpredictable-voluntary; unpredictable-involuntary. In information literacy research, it may be useful to employ similar distinctions between planned transitions (as exhibited during periods of career decision-making) and forced transitions (such as the redundancy transitions discussed by Oakland et al, 2012).

In consideration of the arguments presented in this chapter, the development of supportive structures to enhance citizens' career information literacy skills is an aspirational objective. Much of employability information literacy education is provided by academic librarians due to the focus of this type of literacy on graduate employability. In contrast, career information literacy qualifies multiple transition points, and incorporates adult literacies. This suggests that career information literacy needs to be supported through institutions and community structures serving adults regardless of their age and occupation status. Public libraries, career counselling services, job centres, training centres, workplaces, professional associations, labour unions, charities, and independent institutions that offer vocational counselling are natural candidates for training delivery and collaboration. Building on the important outreach initiatives initiated by Crawford and Irving

(2011) in the public library, novel and more advanced career information literacy programmes may be offered to library users.

The skills and content to be taught as part of career information literacy instruction remain to be established and verified through future research: this chapter serves primarily to introduce this concept and to synthesise the extant associated thematic streams. Overall, it is anticipated that the main goal of such instruction would be to align career education with information literacy education by employing a hybrid approach. By consulting the available literature, as well as Guichard's review of a century of career education (Guichard, 2001), and the latest taxonomy of career information literacy skills (Valentine & Kosloski, 2021), multiple potential approaches can be identified. Individuals could be taught information literacy and digital literacy skills in order to successfully perform career self-management activities such as planning, learning, self-reflection, and social engagement. A broader 'career literacy' course could implement career education topics alongside career information literacy instruction. Career education topics may include, but not be limited to: changes in the labour market, including in-demand occupations and job demand projections; local work, education, and upskilling opportunities; self-knowledge and personality profiling; financial planning; and many more.

6 Conclusion

At a time of considerable workplace digitalisation and career precarity, individuals' engagement with work, employability, and career development are changing. Two types of work-related information literacy, in particular – employability information literacy and career information literacy – present opportunities for the empowerment of citizens. The former comprises generic and subject-specific skills, while the latter type relates to three clusters of competencies: career self-management skills, digital career literacy skills, and career information literacy skills.

Employability information literacy scholarship, concentrated primarily in the area of graduate employability, however, fails to address the complexity and longevity of the issues that society faces. Of particular importance in the development of competent, confident, and future-ready workers is the notion of sustainable employability, i.e. employability that is associated with principles of social justice, decent work, and empowerment through personal agency and choice. Indeed, to craft dignified and empowered lives for themselves, individuals need to develop sustainable employability skills for engagement in lifelong career development and self-management. A conceptual roadmap for the development of information literacy competencies in citizens as related to work, and for the promotion of personal resilience during career transitions is needed.

In this chapter, such a roadmap is presented through the analysis of extant narratives in employability and career information literacy research. A thematic grouping of career self-management skills, digital career literacy skills, and career information literacy skills clusters indicates that there are opportunities to incorporate information literacy within the career self-management skills matrix, and to embed digital literacy skills within the career information literacy skills profile.

Opportunities for the advancement of employability and career information literacy research are also highlighted. It is suggested that transition is an overlooked aspect of informed career management in the modern age which merits closer investigation, and that the assumed transferability of subject-specific employability information literacy skills from educational settings into the workplace should be addressed through the provision of on-going workplace training.

Career information literacy has the potential to unify disparate narratives pertaining to information use, career self-management, and digitalisation, and to pave the way for further research that extends the graduate employability literacy concept beyond higher education. To establish career information literacy as a key competence for personal effectiveness across work and career transitions, however, more research and institutional advocacy is required. Sustainable employability, transition, self-management, and career decision-making are key pillars upon which future career information literacy research and advocacy can be predicated.

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