

The role of information in career development

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The role of information in career development has received relatively little research attention. A literature review completed as part of a doctorate in the first half of 2021 indicates that career information features in only a small number of publications spread across Career Studies, Organisational Studies, and Education in the time period between 2000-2021. In many cases, career information has not been the main focus of these publications. It has, instead, been viewed as a by-product of other phenomena. This article contends that information should be treated as central, rather than peripheral, to career development processes.



Introduction

Information occupies a paradoxical position in the career development literature, identified as central to career processes, and yet rarely a central focus of study. On one hand, making informed career decisions is dependent on having adequate knowledge of available career options and the world of work (e.g. Prvulovic, 2020), and career information is an integral component of career education (Shevlin & Millar, 2006). Information provision is one of the primary functions of career counselling (Osborn et al., 2014). On the other hand, there is limited research into several aspects of career information use, and its role in career development tends to be implicit rather than explicit.

The importance of information in career development is underscored by its prominence within career-related policy. For instance, Career Information, Advice and Guidance (CIAG) policy – sometimes referred to as ‘Career Information and Guidance’ (CIG) policy or

‘Career Information, Advice, Education, and Guidance’ (CIAEG) policy – is part of a network of lifelong learning, skills development, and economic resilience policies worldwide. Ensuring that every individual has access to high-quality and impartial career information about work and education opportunities has long been a pillar of European career policy (e.g. UNESCO, 2000). CIAG policy in the UK stipulates that every young person and their parents should have access to career information and advice, and the introduction of the Gatsby benchmarks in England in 2013 emphasised the importance of linking the curriculum with future study options and labour market opportunities (Department for Education, 2018). The second of the eight Gatsby benchmarks directly addresses information, stating that the information provided in schools should be comprehensive, accurate, and up-to-date, and that young people should be taught how to find and process career information (Gatsby Benchmark Toolkit, 2018, p. 8).

Information features in discussions around technologies, career education, career assessment, and career intervention, however, the emphasis has been predominantly on information provision and not on information use. Here, the treatment of career information in the literature appears to be governed by a ‘lack of information’ assumption - a belief that insufficient career information is at the root of career indecision, and that the provision of more career information will resolve career conundrums. Increasingly, however, the modern, technologically mediated information landscape is characterised not so much by a lack of information, as by an overabundance of information and misinformation (Owen et al., 2020). In light of the 2020 COVID-19 pandemic, this overabundance of information has been termed an ‘infodemic’ after having been referred to as an ‘information explosion’ in previous years (e.g. Beath et

al., 2012; Germani & Biller-Andorno, 2021). Learners and decision-makers are thus more likely to experience information overload than lack of information (Roetzel, 2019). Yet, the mechanisms by which information behaviours and information skills interface with career development learning, career decision-making, and career information processing in practice are not well understood, both from a self-management perspective, and from a career intervention perspective.

In light of this, an interdisciplinary doctoral project exploring young people's career information literacy and career information use in the context of career development learning and career decision-making is currently being conducted by Marina Milosheva. This project is undertaken in collaboration with Scotland's leading skills agency, Skills Development Scotland, and combines insights from the fields of Career Studies, Information Science, and Information Literacy. The paper presented in this issue reports on the literature review component of this project. Preliminary results of the empirical component of the doctoral project are expected in 2022.

Career influences as opposed to information sources and information behaviours

Multiple formal and informal – otherwise known as 'hot' and 'cold' – information sources are factored into individuals' career development processes at any given time within available opportunity structures (Greenbank, 2009, p. 34). Information can be print-based, web-based, obtained from career services and educational institutions, or obtained from other people (Jenkins & Jeske, 2017). However, the vast majority of research publications that make reference to career information do so in the context of career *influences* rather than information *sources* and information *behaviours*.

For instance, the influence of social actors on career development is well-established (Akosah-Twumasi et al., 2018), and 'knowing who' is an essential part of building one's career capital (Dickmann et al., 2018, p.9). Different studies reveal different orders of influence of social actors on career decisions: Chin et al. (2019)

found that families are more influential than career services, and career services are more influential than impressions gathered through work experience, while Zondag and Brink (2017) found that college professors and courses were rated as the most useful sources of information, followed by career fairs, jobs, internships, and family members. Interestingly, Griffin and colleagues (2010) observed that students in upper grades rated school counsellors and college resources as most useful, while students in lower grades felt that parents, guardians, and relatives were most useful. This suggests that there may be a shift towards the use of more formal resources and a reorientation towards the formation of more realistic representations of the world of work as young people approach crucial transition points. Still, the informational aspects of social exchanges in career development are not well understood, and there are few studies focusing specifically on individuals' information behaviours (Mowbray et al., 2018).

Research in the area of career decision-making styles has alluded to the existence of career information behaviours, however, the units of analysis here have been the attitudinal and affective dimensions of career decision-making rather than its informational determinants. This research makes a distinction along two main types of dichotomies: active (intentional) information seeking versus passive (unintentional); receipt of information, and rational versus affective decision-making. Multiple career decision-making style categories exist, for example: enjoyment-based, ability-based, and goal-based (Jahn & Myers, 2014, pp. 97-99); rational, intuitive, and dependent (Harren, 1979, p. 121); rational, intuitive, dependent, avoidant, spontaneous (van Vianen et al., 2009, p. 300); and disengaged, fixed, satisficing, validating, and gathering (The Careers & Enterprise company, 2016, p. 8). Still, not much is known about the information seeking patterns associated with each decision-making style or stage. High academic achievement appears to be a precursor to the productive engagement with career information, whereas negative career thoughts explain a large amount of the variance observed in 'lack of information' reporting (Kelly & Shin, 2009, p. 201; Kelly & Pulver, 2003, p. 445). It is possible that high academic achievers experience increased positivity and self-efficacy due to the wide range of options they perceive as being available to them. Those who report 'lack

of information' appear to be doing so largely due to affective factors, which could suggest that they avoid engaging with information even when information is available to them.

Nevertheless, these assertions are speculations which might overstate or overgeneralise effects. The main subject of the decision-making styles reported above is, naturally, decision-making; that means that their focal point is not career information use for the purposes of career development learning or career decision-making. The black box metaphor of systems seems fitting here: the inputs and outputs of decision-making can be observed, but its inner informational transformations remain concealed (e.g. Nugent & Cunningham, 2005). The inputs are career influences, and there are multiple decision-making and affective outputs. Information behaviours relative to information sources are underexplored as part of this decision-making process.

Cognitive information processing in context

While individuals' attitudes to various career influences are reasonably well-documented, little is known about individuals' use of information for the purposes of career decision-making and career development learning. Most career decision-making models assume that individuals gather information about themselves and about potential occupations during the middle stages of the career decision-making process – typically at the point where they explore and evaluate options (Pesch et al., 2018). Here, information is instrumental to other processes, rather than the central focus of conceptualisations. Information use may, in fact, be present at all decision-making stages in some capacity, however, there is not much evidence to that account because a comprehensive theory, framework, or model of career information use for the purposes of decision-making is yet to be developed.

However, there are two models that outline both *what* individuals need to know and *how* they come to know it: Cognitive Information Processing Theory (CIP) (Sampson et al., 2004) and the Decision learning, Opportunity awareness, Transition learning, and Self-awareness (DOTS) model (Law & Watts, 2003). According to CIP, individuals need to learn both

about themselves and the world of work, and they do so through a combination of decision-making skills and executive processing. The decision-making skills are Communication, Analysis, Synthesis, Valuing, and Execution (also known as the CASVE cycle), and meta-cognitive processes such as self-talk, self-awareness, and monitoring and control govern the decision-making process. In the DOTS model (Law & Watts, 2003, pp. 1-4), much like in the CIP model, the bodies of knowledge to be mastered are knowledge of the world of work and knowledge of the self. In both DOTS and CIP, there is an understanding of how decisions and transitions are made: in DOTS, these processes are modelled in a non-prescriptive manner, whereas in CIP, they are modelled cyclically. CIP and DOTS are therefore relevant to the study of career information use since they directly address the career development learning process, and learning and information are inextricably linked.

As valuable as they may be, these two models, as well as research applying them to various phenomena, may not encompass the full extent and complexity of individuals' everyday use of career information. Career development processes are complex, integrating individual attitudes and aptitudes with external influences, and knowledge of the self with knowledge of the world of work (McMahon & Patton, 2018). Thus, for example, studies evaluating the effectiveness of career interventions based on CIP (e.g. Osborn et al., 2020) cannot fully account for the means by which individuals navigate complex information landscapes in everyday life. Future research should generate more knowledge of individuals' career information use in context, paying special attention to the structural, affective, and cognitive properties of career development learning and career decision-making. Here, information behaviour stories unfolding over time may help contextualise cognitive information processing stages. Bill Law's "new DOTS" model extends the earlier iteration of DOTS to also include 'sensing', 'sifting', 'focusing', and 'understanding' dimensions, and provides an analytical framework against which actions set in a social context can be studied (Law, 2001; *for an overview of Bill Law's work and legacy, see Plant, 2017*). Not only does the new DOTS align well with CIP owing to its career learning focus; it also offers tools with which to explain why information about careers is sought, as well as where it is sought, by whom, how, and when.

Another analytical tool with which it would be possible to explain how and why information is sought within social worlds is Social Cognitive Career Theory (SCCT) (Lent et al., 1994). Social Cognitive Theory (SCT) and its associated approaches were recently argued to be applicable to the study of information-centric phenomena in Information Science such as information behaviours (Middleton et al., 2019). SCCT's self-efficacy, outcome expectations, and personal goals dimensions can thus integrate cognition, action, and information use within social contexts. Cognitive constructs are present in both CIP and SCCT, and the two approaches used together allow for an integrative understanding of career decision-making to be developed (Bullock-Yowell et al., 2012). SCCT can therefore be used alongside CIP and the new DOTS models to conceptualise information use in the context of career development learning and career decision-making.

Lack of information or cognitive overload?

Historically, career information research has been driven by the conceptualisation and assessment of individuals' 'lack of information' or 'lack of occupational knowledge'. Some empirical studies have assessed a single 'lack of information' variable, while others have expanded the dimension into several variables and clusters such as: lack of self, occupational, and process information (Brown & Rector, 2008); need for information and need for self-knowledge (Kelly & Pulver, 2003); lack of information about the process, the self, occupations, and ways of obtaining additional information; and inconsistent information, unreliable information, internal conflicts, and external conflicts (Gati et al., 1996; Levin et al., 2020). Here, the terms 'lack of information' and 'lack of knowledge' have tended to be used interchangeably and have been employed both in relation to the self and the world of work. They have been positioned as effects that underpin career readiness and career indecision.

The assessment of occupational knowledge has typically been associated with developmental perspectives and has been administered to pupils and adolescents. Some studies have assessed young people's actual knowledge of common occupations and occupational categories

(e.g. Ginevra & Nota, 2018), while other studies have also assessed their *perceived* occupational knowledge (e.g. Hirschi, 2011, p. 340; Pesch et al., 2018). For instance, Rohlfing and colleagues (2012, p. 332) studied the relation of occupational knowledge of 'People vs Things', 'Ideas vs Data', and 'Prestige' occupations to career interests and competence perceptions in children, and Cinamon and Yeshayahu (2021) assessed children's occupational knowledge through activities asking them to name and explain occupations. Overall, findings indicate that occupational knowledge increases with age, is gendered, is higher for more conventional and higher-prestige occupations, and enhances career choice readiness. Young people appear to be making career decisions on the basis of the beliefs they have about occupations and their abilities to obtain occupational information, rather than on the basis of any objective informational criteria (Pesch et al., 2018, p.585).

Indeed, not much is known about the means by which young people obtain career information or the means by which they apply this information to their career decision-making. Knowledge of, or information about, common occupational categories might be quite different from information processed through an individual's unique career development worldview. In addition, the reality of individuals' use of career information may be much more complex than the effects described above, and 'lack of information' may be a localised phenomenon rather than a global one. Individuals from under-privileged or minority backgrounds may experience the greatest inequalities in access to information (Moote & Archer, 2016; Puckett & Hargittai, 2012), and some institutions may fail to provide impartial career information and advice (e.g. Acquah et al., 2015, p. 197; Houghton et al., 2020).

There is little research to directly attest to the validity of such assumptions, however, there are indications that new informational phenomena are emerging both at the systemic level and at the level of the individual. At the systemic level, there are challenges around the provision of information in an integrative, personalised, and comprehensive manner. Students find that they have to inquire individually from multiple institutions or information databases in order to ensure comprehensiveness, continuity, and personalisation of information (Herndon, 2012). At

the individual level, the interaction with disconnected information systems and information-rich social environments results in a considerable cognitive burden, which can lead to disengagement or decision paralysis in turn. Young people report struggling with findings answers to fundamental questions such as “What are the possible careers open to me?” and experiencing cognitive overload due to being unable to make sensible comparisons between options (The Careers & Enterprise company, 2016, pp. 4-10). In other words, their cognitive architecture may lack structuring principles and heuristics with which to filter and make sense of the incoming information – which are pillars of efficient cognitive processing and decision-making (Gigerenzer & Gaissmaier, 2011; Hills, 2018).

Consequently, it might be most appropriate to state that there is not a lack of information within career development systems per se. Instead, there may be a lack of the right information, at the right time, and in the right format. In addition to lack of information, there may also be cognitive overload and difficulties in evaluating the relevance and quality of available career information.

Information Science and career information literacy

To prevent information overload, researchers have called for the development of occupational information systems and online information sources that are more personalised and integrative (Attwell, 2019, p. 89-90; Borbely-Pecze, 2020). There have been debates as to how ICT should be integrated in career guidance as well (Bimrose et al., 2015, p. 5; Kettunen et al., 2015, p. 43). Overall, dominant narratives pertaining to the role of ICTs in career development have sought to embed digital technologies within the service, design, and intervention traditions of career development, and to provide information to individuals in novel ways. However, little is known about the self-management and career information competencies of individual decision-makers and the means by which they make sense of online career information.

For individuals, digital technologies can fulfil a number of roles: a library; a media channel; a surveillance camera; a marketplace; a meeting place; or an arena

where freedoms and power struggles are in a constant push and pull (Hooley & Staunton, 2020, pp. 5-6). With the advent of social media in particular, individuals and those who support them in their decision-making are faced with a number of information quality challenges. Some examples of such challenges are: reduced data quality; a lack of clarity about the context, authorship, and geographic location of information sources; intentional and unintentional reporting biases; and popularity and similarity biases (e.g. Sampson et al., 2020; Sampson et al., 2018). While a host of career management skills exist (Sultana, 2012), few of them directly address the discovery, evaluation, and effective use of information as part of career development learning and decision-making – both with a view towards the challenges of using online information and as a part of wider information landscapes. Of particular interest here is the role of digital literacy in career development, which pertains to individuals’ skills in filtering and interpreting online career information (e.g. Hooley, 2012; Staunton, 2018), as well as the role of ‘career information literacy’, which is an emerging area of interest for librarians, researchers, and career services alike (Lin-Stephens et al., 2019, p. 234).

In Information Science, information literacy is defined as a “set of skills and abilities which everyone needs to undertake information-related tasks; for instance, how to discover, access, interpret, analyse, manage, create, communicate, store and share information.” (CILIP, 2018, p.3). This formulation of information literacy includes both *digital information* and *social sources of information*. Accordingly, while some researchers have focused only on the digital aspects of information literacy, others have understood information literacy as either a meta-literacy or as a socially-situated and context-specific ‘way of knowing’ within information landscapes (e.g. Lloyd, 2006; Lloyd, 2012; Mackey & Jacobson, 2011). When formulated in this way, career information literacy can combine information skills and information behaviours into a common designation: information practices. As part of information practices, information skills are deployed in a certain context, with a certain learning or decision-making goal, and relative to textual, social, and physical sources of information.

Information Science can therefore bring novel insights to Career Studies, and can complement

existing knowledge of career influences and cognitive information processing with information-centric concepts such as information behaviours and information literacy. Career information literacy is a promising area of study which addresses both of the gaps in knowledge identified in this paper – career information skills and career information use in context – and creates interdisciplinary linkages between the two disciplines.

Conclusion

Currently, career information can be found in one of two main roles in the literature. One of its roles is as a peripheral component in discussions of career education, career intervention, and the role of ICT in career guidance. Another one of its roles is as a 'lack of career information' discourse which overlooks systemic information provision and information quality challenges, as well as individual information use and information competency matters. Against the backdrop of technological and socio-economic developments, the role of information in career development is changing. By focussing exclusively on information provision by service providers, there is a risk that some of the fundamental informational determinants of individuals' career development learning and career decision-making would be overlooked.

The development of career information competencies in individuals making career decisions, as well as in the career practitioners who support them, is now more important than ever. More information-centric and interdisciplinary research is needed in order to achieve this. Information Science has much to offer here. The study of career information literacy has the potential to integrate cognitive overload, information validity, information sources, information skills, and information use domains into a cohesive conceptual framework. The study of career information literacy practices, in particular, can generate new knowledge of the role of information at both the systemic and individual level.



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