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# Technological transformation and human resource development of early career talent: Insights from accounting, banking, and finance

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**Abstract**

This paper provides insights into the opportunities and risks that the technological transformation of Human Resource Development (HRD) presents in the context of early career talent in the accounting, banking, and finance sector. Three research questions are explored. (1) What opportunities exist for organizations investing in technology as a talent management strategy for recruiting early career talent? (2) What are the risks or threats to organizations from investing in technology as a strategy for recruiting early career talent? (3) What role do meso-level actors play in recruiting early career talent? More specifically, to what extent do the views of graduate recruiters and career advisors as agents of organizations and higher education institutions align or diverge? Thirty-six semi-structured interviews were conducted with graduate recruiters and career advisors. Thematic analysis was subsequently applied, identifying three themes (i) employer branding, (ii) virtual recruitment, and (iii) diversity and social inclusion agendas, each presented opportunities and risks. The theoretical contribution comes from advancing career ecosystems and the new psychological contract as a theoretical framework by focusing on technological transformation and capturing the dyadic relationship between the meso-level actors. Our paper integrates three topic clusters of HRD interventions

and outcomes, national HRD, and career development, while manifesting the role and importance of under-represented career actors. Practical implications aim to help shape talent management strategies for recruiting early career talent. Capturing the views of career advisors in this study can help organizations identify blind spots and inform policy.

**KEYWORDS**

career ecosystems, digitalization, early career talent, human resource development, new psychological contract, recruitment, talent management

## 1 | INTRODUCTION

The success and sustainability of technological transformations rely on overcoming structural ambiguities and engaging individuals in the process (Vereycken et al., 2021). The COVID-19 pandemic has raised unprecedented challenges to the talent management strategies of organizations, fueled by socio-technical change and temporary restrictions to our usual way of living (Mulder, 2021). Social distancing restrictions combined with the need to work from home accelerated digitalization (Schlogl et al., 2021). These fundamental changes to our working lives have provided an opportunity to overcome traditional experiences of resistance to the adoption of new technology and ways of working (Hodder, 2020). Alongside the COVID-19 pandemic, organizations are dealing with the pressures of climate change, looking for opportunities to reconstitute their socio-material construction via reduced levels of printing and business-related travel (Faulconbridge et al., 2020). The demand for remote working opportunities has seen digital nomadism become increasingly institutionalized and professionalized (Aroles et al., 2020; Gazit et al., 2021). Managing these challenges is crucial since talent management determines competitive advantage and organizational sustainability (Ab Wahab & Ekrem, 2020; Illes et al., 2010). The widening gap between the technological-human intersection within and between organizations, and its effects on talent management and careers (Kim et al., 2022), therefore, emphasize the need for research to explore these challenges.

One area of talent management significantly impacted by the COVID-19 pandemic was the recruitment of early career talent, which underwent the equivalent of five years of digital transformation in four months (Donald et al., 2021). The UK's accounting, banking, and finance sector offers a fascinating case to study the phenomenon because the internship and placement pipeline plays a crucial role in filling vacancies on graduate schemes (Prospects, 2021). Furthermore, according to High Fliers Research (2020), this sector accounted for 37.22% (9167) of all graduate vacancies and 48% of all private-sector vacancies in the UK. The sector experienced a decrease of 12% for graduate opportunities and 56% for placement opportunities in the 2019/2020 recruitment cycle as organizations struggled to adapt to unprecedented levels of disruption and change (Institute of Student Employers, 2020). Although demand for talent has now recovered to pre-pandemic levels, the increased volume of applicants exacerbates another pre-existing challenge of securing diverse and socially mobile talent for the organization (Belgorodskiy et al., 2012; Kumari & Saini, 2018).

In response to the unprecedented challenges of the COVID-19 pandemic, and within the context of the 4th Industrial Revolution (Schwab, 2017), our paper aims to provide insights into the opportunities and risks that the technological transformation of Human Resource Development (HRD) presents in the context of early career talent in the accounting, banking, and finance sector. This study is timely since the knock-on effect of the pandemic-related restrictions means that graduates entering the labor market are some of the least prepared cohorts due to reduced

opportunities for work experience combined with disruption to education and daily life (Donald & Jackson, 2022). This highlights the relationship between employers and universities since the training and development of talent capable of meeting the demands of the industry rely on fostering win-win outcomes between these actors (Buckholtz & Donald, 2022). Additionally, this study addresses the strategic dimensions of HRD at the interaction between context, processes, and actors (Garavan, 2007), thus acknowledging how integrating individual and organizational perspectives is crucial to understanding future HRD and talent management trends (Anderson & Tomlinson, 2021).

In this study, the organizational perspective is represented by Graduate Recruiters (GRs) as they act as the agent of the organization. Their remit includes responsibility for or support of (e.g., through research and strategic planning), the attraction and selection of current university students and recent graduates for spring week, summer internship, year-in-industry placement, and most importantly, graduate roles. GRs rely heavily on partnerships with Career Advisors (CAs) operating within higher education institutions, another actor in the career system of transformation from education to work. The remit of CAs is to provide career advice and broader career support to students and recent graduates. We collected data from both GRs and CAs because of their dyadic relationship and the opportunity to enrich the insights provided. We believe the inclusion of GRs and CAs strengthens the study by responding to calls for additional HRD research "advocating for under-represented career actors" (Shirmohammadi et al., 2021, p. 197).

Our paper provides the following contributions. We advance the understanding of HRD in the context of preparing, attracting, and identifying suitable graduates' via the lens of the Career Ecosystems Theory and the New Psychological Contract (NPC) (Baruch & Rousseau, 2019). Second, we extend the cover of the NPC beyond the relationship between employees and organizations (Rousseau, 1995) by focusing on the dyadic relationship of the meso-level actors (Holmes, 2013). Lastly, we incorporate the role of innovative technology into the career ecosystem (Vereycken et al., 2021). Integrating three topic clusters within HRD literature (i) HRD interventions and outcomes, (ii) national HRD, and (iii) career development (Shirmohammadi et al., 2021), our study advances HRD research by integrating technological transformation and talent management (Mulder, 2021).

The study is transferrable in a way that 'matters' to individuals and to employers looking for talent. It indicates how a better fit can be reached between graduates and prospective employers, and how both actors may benefit from the services of the intermediary actors of CAs and GRs in the career ecosystem. This may help in improving and optimizing the effectiveness of recruitment and selection processes.

## 2 | THEORETICAL FRAMEWORK

Career Ecosystems Theory (CET) captures how actors operate in an interconnected and interdependent manner within an ecosystem (Baruch, 2015; Donald, 2022; Gribling & Duberley, 2021). This theory brings together different actors that interact and are inter-related, each one of them influences the path, progress and direction of other actors (Bhaskar et al., 2022). Empirical studies indicate the usefulness of the theory in terms of explicating career adaptation processes (Wang et al., 2022). Specific studies looked at the transition from higher education to the labor market (Donald et al., 2021; Healy et al., 2022).

Within this paper, our interest is in the meso-level actors of GRs and CAs who are agents of the micro-level actors of organizations and educational institutions, respectively (Holmes, 2013). The views of these meso-level actors continue to be underrepresented in empirical studies within HRD and talent management research (Minocha et al., 2017; Shirmohammadi et al., 2021). This is despite the mutual reliance of actors on shared benefits of early talent in organizations and enhanced league table rankings for universities (Tomlinson & Anderson, 2020). Moreover, the context of the COVID-19 pandemic and its impact on the dyadic relationship within a career ecosystem offers new avenues for investigation (Donald et al., 2021).

The NPC captures the unspoken and unwritten rules that form part of an agreement between two parties (Rousseau, 1995). The vocational behavior and HRD literature have sort to apply CET and NPC as a theoretical framework focusing on the relationship between organizations and their employees (e.g., Baruch & Rousseau, 2019; Donald, Baruch & Ashleigh, 2020). Yet, this was not applied to the dyadic relationship between GRs and CAs as the meso-level actors operating within a career ecosystem. The unspoken and unwritten rules can be particularly challenging in this relationship due to high personnel turnover making it difficult to establish sustainable working relationships (Vick & Robertson, 2018). Our interest is in the extent to which the views of GRs and CAs align or diverge, expanding the literature by manifesting the collaborative-competitive nature of relationships between career actors, as well as offering practical implications for future collaborative agendas. These insights can facilitate organizations to optimize their use of technology for talent management and the associated sustainable competitive advantage (Ab Wahab & Ekrem, 2020; Illes et al., 2010; Mulder, 2021).

## 3 | DEVELOPMENT OF RESEARCH QUESTIONS

Recruiting early career talent offers an opportunity for an organization to differentiate itself from the competition as part of a talent management strategy (D'Armagnac et al., 2022; McCracken et al., 2016). Applicants often receive multiple offers of employment from prospective employers (Shivoro et al., 2018). By securing the most employable graduates, an organization can establish and maintain a competitive advantage (Petruzziello et al., 2022). However, the COVID-19 pandemic caused significant disruption to the world of work and the traditional approaches to recruiting early career talent (Cooke et al., 2021). For example, by the end of March 2020, 92% of GRs worked from home, 95% moved meetings online, and 85% reduced their travel due to pandemic-related restrictions (Hooley, 2020). New strategies were thus required to sustainably navigate these impacts (Ererdi et al., 2022).

In response, organizations continue to invest in technology in critical areas of automation and data analytics to streamline their operational activities and increase productivity (Tarofder et al., 2017). The COVID-19 pandemic highlights the importance of such approaches since organizations will likely face increased numbers of applicants per vacancy as competition for graduate employment continues to rise (Donald et al., 2021). Furthermore, the accounting, banking, and finance sector had already begun to embrace digital selection procedures, including online applications, online psychometric testing, digital interviews, and gamified assessments (Woods et al., 2020). However, much of the employer branding and the later stages of the recruitment process tended to be carried out in person (Cheng & Hackett, 2021). The COVID-19 pandemic forced significant investment in technology (Soto-Acosta, 2020) as social distancing guidelines temporarily prohibited in-person assessment. It has also helped overcome resistance to adopting new technologies (Hodder, 2020). However, concerns still exist regarding the potential for selection bias within the recruitment process, mainly if the individuals involved in designing and coding the algorithms are not necessarily representative of the broader population (Woods et al., 2020). This is problematic since the accounting, banking, and finance sector has historically struggled to meet their diversity and social mobility targets (Belgorodskiy et al., 2012).

The role of technology in the recruitment of early career talent is expected to play a significant role given the expectations of a decade of rapid technological process, in particular AI, fueled by the COVID-19 pandemic (Baker et al., 2020; Ozili & Arun, 2020). Organizations will seek to keep aspects of technological innovation that work while addressing the risks that emerge. Therefore, this study asks two initial research questions.

*Research Question One (RQ1)*: What opportunities exist for organizations investing in technology as a talent management strategy for recruiting early career talent?

*Research Question Two (RQ2)*: What are the risks or threats to organizations from investing in technology as a strategy for recruiting early career talent?

Furthermore, technological innovation's success depends on the engagement of those involved in the process and the management of ambiguities (Vereycken et al., 2021). This involves the GRs as agents of prospective employers and CAs as the additional meso-level actors engaged in the dyadic relationship playing out within a career ecosystem (Gribling & Duberley, 2021). The views of CAs are of significant interest since they form partnerships with multiple organizations and thus complement the lived experiences of GRs. The latter may operate with a single organization or a small group of organizations. However, the degree of alignment or divergence between the views of GRs and CAs following the COVID-19 pandemic has not yet been empirically investigated. The literature lacks insights that could extend the CET and NPC by acknowledging the role that technology plays within such interactions between actors while facilitating organizations to optimize their use of technology for talent management and the associated sustainable competitive advantage (Ab Wahab & Ekrem, 2020; Mulder, 2021). Therefore, our study thus asks an additional research question.

> *Research Question Three (RQ3)*: What role do meso-level actors play in recruiting early career talent? More specifically, to what extent do the views of GRs and CAs as agents of organizations and higher education institutions align or diverge?

## 4 | METHOD

### 4.1 | Research design and research tool

Our research design followed the constructivism research philosophy, abductive approach, and qualitative data collection and analysis methods. Constructivism assumes that reality (ontology) is socially constructed, with multiple interpretations and meanings of participants and researchers; knowledge (epistemology) is based on opinions and is individual and context-specific; and axiology is value-bound and reflexive (Saunders et al., 2019). Our research approach was abductive because our interview protocol was designed following an exploration of the HRD and vocational behavior literature. Subsequently, 36 semi-structured interviews were conducted with GRs and CAs. The interviews lasted between 29 and 70 min in length, with an average time of 40.5 min. The interviews were conducted by the lead author for consistency and took place by telephone. The interviews followed a semi-structured format (see Appendix A for the interview protocol).

### 4.2 | Context and recruitment of participants

The accounting, banking, and finance sector was chosen as it represented 37.22% (9167) of overall graduate vacancies and 48% of graduate vacancies in the private sector in the UK (High Fliers Research, 2020). The sector offered coverage of many graduate employers while maintaining a sector-specific focus since the views of actors operating within a career ecosystem have been shown to vary by industry sector (Donald et al., 2018). Additionally, the sector of focus meant that individuals could work from home during the COVID-19 pandemic and thus had a lived experience of the impacts of the deployed technological innovations.

The identification of participants initially took place via professional networking platforms, university career service and organization websites, and affiliate institutions of graduate recruitment. Subsequently, a stratified snowballing approach expanded the sample from the initial participants in the study.

### 4.3 | Sample

The study sample comprised 36 participants (17 GRs and 19 CAs). The median years of work experience were 14.1, and the median age bracket was 35–44. Table 1 provides the characteristics of the participants.

**TABLE 1** Participant information

| ID | Role | Gender | Age | Experience (years) | Interview length (min) |
|---|---|---|---|---|---|
| 1 | Career Advisor | Male | 45–54 | 25 | 40 |
| 2 | Graduate Recruiter | Male | 25–34 | 6 | 29 |
| 3 | Career Advisor | Male | 35–44 | 8 | 41 |
| 4 | Career Advisor | Female | 35–44 | 7 | 39 |
| 5 | Career Advisor | Male | 25–34 | 8 | 33 |
| 6 | Graduate Recruiter | Female | 35–44 | 9 | 37 |
| 7 | Career Advisor | Female | 45–54 | 19 | 62 |
| 8 | Graduate Recruiter | Female | 25–34 | 5 | 30 |
| 9 | Career Advisor | Female | 35–44 | 18 | 40 |
| 10 | Career Advisor | Male | 25–34 | 11 | 42 |
| 11 | Career Advisor | Male | 25–34 | 7 | 38 |
| 12 | Career Advisor | Male | 35–44 | 15 | 49 |
| 13 | Career Advisor | Male | 45–54 | 14 | 51 |
| 14 | Graduate Recruiter | Male | 25–34 | 3 | 39 |
| 15 | Career Advisor | Female | 65+ | 27 | 35 |
| 16 | Graduate Recruiter | Female | 25–34 | 12 | 41 |
| 17 | Career Advisor | Male | 35–44 | 17 | 29 |
| 18 | Career Advisor | Female | 35–44 | 10 | 33 |
| 19 | Graduate Recruiter | Female | 25–34 | 9 | 40 |
| 20 | Graduate Recruiter | Male | 25–34 | 8 | 50 |
| 21 | Graduate Recruiter | Female | 35–44 | 23 | 39 |
| 22 | Graduate Recruiter | Female | 35–44 | 20 | 43 |
| 23 | Graduate Recruiter | Male | 35–44 | 14 | 33 |
| 24 | Graduate Recruiter | Female | 35–44 | 15 | 30 |
| 25 | Graduate Recruiter | Female | 35–44 | 14 | 55 |
| 26 | Career Advisor | Female | 35–44 | 15 | 33 |
| 27 | Graduate Recruiter | Female | 25–34 | 6 | 43 |
| 28 | Graduate Recruiter | Male | 45–54 | 17 | 51 |
| 29 | Career Advisor | Female | 45–54 | 25 | 34 |
| 30 | Career Advisor | Male | 45–54 | 17 | 34 |
| 31 | Graduate Recruiter | Male | 45–54 | 17 | 38 |
| 32 | Career Advisor | Male | 55–64 | 35 | 55 |
| 33 | Career Advisor | Female | 45–54 | 33 | 41 |
| 34 | Career Advisor | Female | 25–34 | 7 | 30 |
| 35 | Graduate Recruiter | Male | 25–34 | 9 | 70 |
| 36 | Graduate Recruiter | Male | 25–34 | 2 | 31 |

ID codes enabled the identification of participants via linked anonymity without revealing personal details of the individuals themselves. A maximum of three participants came from any organization or higher education institution to offer a balance between enrichment via complementary views from the same institution and coverage from

different institutional settings. The GRs represented large organizations and Small and Medium-sized Enterprises (SMEs) from UK-based organizations in the accounting, banking, and finance sector. The CAs worked with students interested in a career in this sector and represented coverage of pre-1992 and post-1992 universities. Overall, 27 institutions were represented, offering coverage of Scotland, Wales, North of England, Midlands, South of England, and London. However, it should be noted that while the individuals who took part in interviews were employed by institutions, the information they reported was a combination of talent management policies and their observations from personal experiences.

The sample size was determined via the post-positivist notion of saturation as the primary means of verification for thematic analysis (Suddaby, 2006). Category saturation occurred at 16 GRs and 18 CAs, although 17 GRs and 19 CAs were interviewed to confirm that the addition of new participants did not generate new themes (Corbin & Strauss, 2015). Therefore, overall saturation was achieved with 36 participants exceeding the median number of interviews of 32.5 in authoritative qualitative studies (Saunders & Townsend, 2016) and sitting within the 20–30 guidelines (Morse, 1994).

## 4.4 | Thematic analysis of data

The adoption of thematic analysis responded to Corley's (Corley, 2015, p. 2) calls to "engage with those living the phenomenon and attempt to understand it from their perspective." Thematic analysis is an appropriate method for this study since it captured the views of GRs and CAs concerning the impacts of technological innovation during the COVID-19 pandemic. The interviews were audio-recorded and transcribed verbatim. The transcripts were then loaded into the software NVivo (Version 12) to conduct the thematic analysis because it offered transparency, flexibility, and the ability to code and retrieve data (Corbin & Strauss, 2015).

The reflexive thematic analysis protocol followed the guidelines offered by Braun and Clarke (2019) that expand on their early work by incorporating six phases of thematic analysis (Braun & Clarke, 2006). The lead author was immersed in the data and generated succinct labels to code the entire dataset. These codes were subsequently revised and used to create initial themes. The reflexive thematic analysis approach was complemented with post-positivist aspects of inter-coder reliability, credibility, transferability, dependability, and confirmability. The other two members of the research team repeated the process independently and then the codes and themes were reviewed to ensure they were distinct and underpinned by a central concept of technological innovation in talent management during the COVID-19 pandemic. The inter-coder reliability exceeded 90 per cent offering a high level of reliability.

Lincoln and Guba (1985) offer 'credibility,' 'transferability,' 'dependability,' and 'confirmability' as four criteria for establishing trustworthiness in qualitative research. These criteria developed previous terms of 'establishing truth,' 'applicability,' 'consistency,' and 'neutrality' (Guba, 1981). Credibility refers to confidence in the findings and was established in this study through an inter-coder reliability rate in excess of 90 per cent. Moreover, this was complemented via triangulation by going back to the participants to confirm our findings reflected their lived experiences. Transferability in this study applies to the accounting, banking, and finance sector since the sector is highly regulated at the national and international levels. Therefore, our findings have the potential to apply to other national economies where there is a high degree of alignment with the regulatory processes adopted by the United Kingdom. Dependability comes from the clear audit trail of our study and the approval of the study participants as external auditors that our processes and outcomes were transparent and reliable. However, the nature of qualitative research inquiry and the evolving nature of the global environment in which we live means that the views of our participants are likely to be transient rather than fixed across time. Finally, confirmability refers to the degree of neutrality in the study's findings and again we sort to check for our own biases as part of the triangulation process by going back to the participants to ensure that they felt that their voices and lived experiences were accurately reflected in our findings.

## 5 | FINDINGS AND ANALYSIS

### 5.1 | Thematic analysis report

Figure 1 provides a clear audit trail, enabling replication of the study, and promotes reliability of the treatment of qualitative data. It evidences the final data structure (phase six) representing documentation output from phases one to five, based on guidance and notation by Gioia et al. (2013, p. 21).

Three themes were identified and named (i) Employer Branding, (ii) Virtual Recruitment, and (iii) Diversity and Social Inclusion. The next section of this paper defines each theme and summarizes the findings. Defining the themes is considered a vital part of the transparency and replicability of thematic analysis (Aguinis & Solarino, 2019).

### 5.2 | Theme I: Employer branding

The theme 'Employer Branding' is defined as the activities undertaken by an organization to attract early career talent. Figure 2 presents a Graduate Recruitment Attraction Matrix (GRAM) offering a summary of the twenty-five activities that GRs and CAs referenced in the semi-structured interviews. The activities are grouped based on whether a single organization or multiple organizations are likely to organize or attend via the representation of GRs. They are also grouped based on whether a single university or multiple universities are likely to organize or participate via the representation of CAs. This innovative approach to representing the activities based on meso-level actors' involvement within a career ecosystem can help GRs and CAs visualize their available opportunities.

The social distancing guidelines during the COVID-19 pandemic meant that organizations had *written off the idea of being able to do anything physical on campus in 2020 and possibly 2021* (GR:19). This was a significant decision
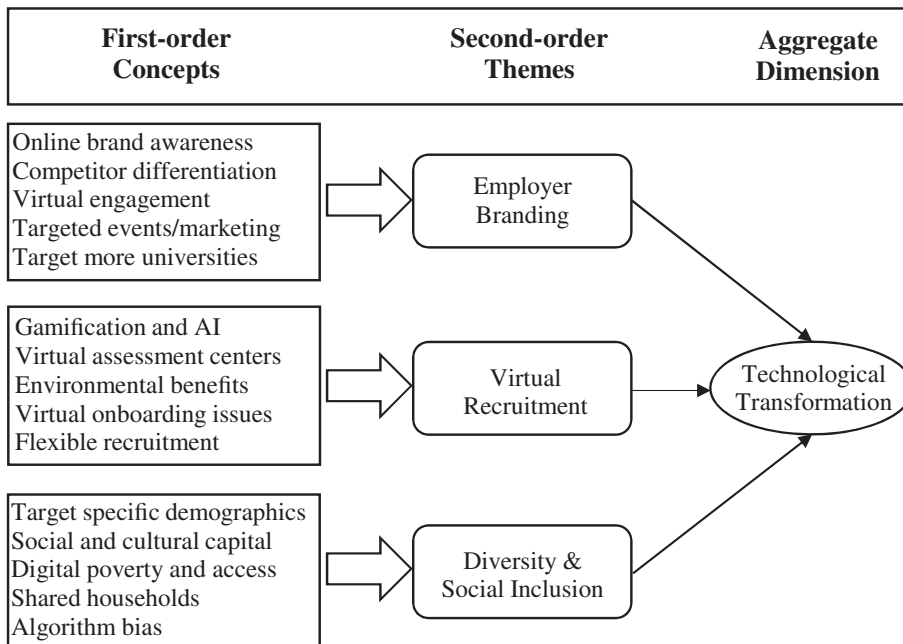


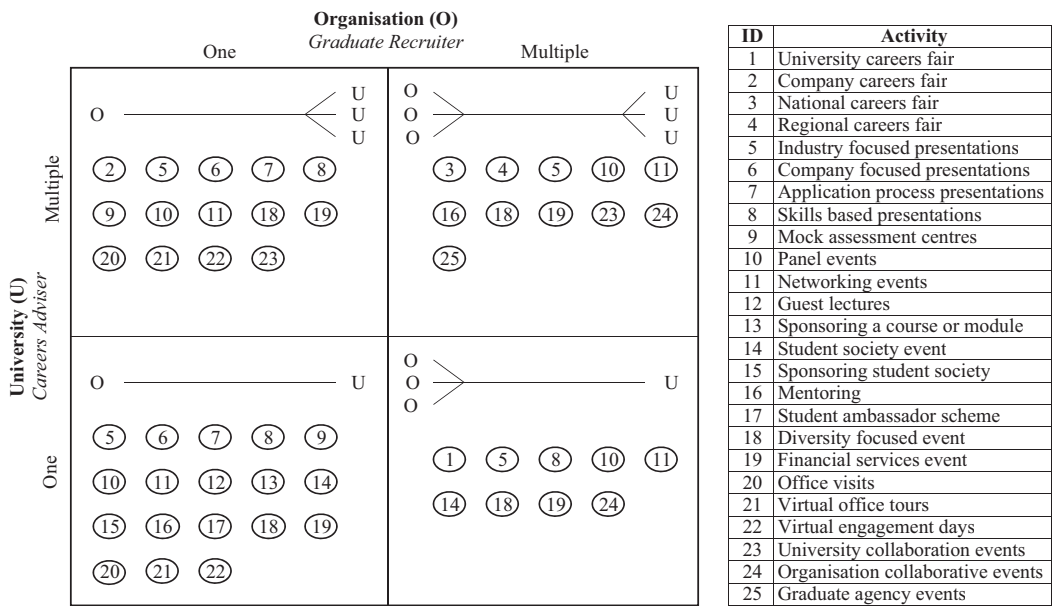**FIGURE 1** Evidences the thematic analysis report

| ID | Activity |
|----|----------|
| 1 | University careers fair |
| 2 | Company careers fair |
| 3 | National careers fair |
| 4 | Regional careers fair |
| 5 | Industry focused presentations |
| 6 | Company focused presentations |
| 7 | Application process presentations |
| 8 | Skills based presentations |
| 9 | Mock assessment centres |
| 10 | Panel events |
| 11 | Networking events |
| 12 | Guest lectures |
| 13 | Sponsoring a course or module |
| 14 | Student society event |
| 15 | Sponsoring student society |
| 16 | Mentoring |
| 17 | Student ambassador scheme |
| 18 | Diversity focused event |
| 19 | Financial services event |
| 20 | Office visits |
| 21 | Virtual office tours |
| 22 | Virtual engagement days |
| 23 | University collaboration events |
| 24 | Organisation collaborative events |
| 25 | Graduate agency events |

**FIGURE 2** Presents a graduate recruitment attraction matrix (GRAM), which maps twenty-five attraction activities onto a four-quadrant matrix

since the approach was viewed as *bucking the trend of what we have always done* (GR:14). Most CAs believed they had *seen the end of face-to-face careers fairs* (CA:12) since the *level of engagement with recruitment fairs had fallen away in the last 5–10 years* (CA:12). The view was shared by GRs, who claimed that *companies will still want to have that on-campus activity, but they will do so through hosting individual societies or student groups rather than mass invite events like before COVID* (GR:23). The shift to online events proved popular with GRs. They found that reduced time spent traveling around the UK enabled their teams to be more closely connected, improving communication, teamwork, and strategic direction. As GR:14 states, *many organizations are re-allocating some of what they usually spend on campus and event budgets. They're sort of redistributing that towards digital marketing, social media, targeted emails, and things like that*. The view is shared by CA:34, who observed *I cannot see employers thinking we want to go back to spending thousands of pounds on travel and accommodation and attending these events when we can just stick everything online*. The virtual approach was viewed as particularly beneficial by CAs of universities in remote locations where *the logistics of an employer coming down to run a session in the past has been an issue* (CA:26). This view was shared by GR:25, who stated that *what online now means is that you can reach people from 40 universities or 50 universities or 100 universities in one event*.

However, both CAs and GRs voiced concerns about the virtual approach to employer branding. For example, GR:25 stated that *employers who are not at the top of their market struggle to identify themselves in a cramped and clustered market*. Additionally, GR:16 claimed *you are going to struggle to get across to the student what roles you have and what makes it special to join your organization instead of a competitor organization*. The concern from CAs was that GRs and organizations might decide to cut out the university careers service going forward, making it much more difficult for CAs to meet their employer engagement targets. Furthermore, CAs felt that virtual-only attraction events risked organizations only reaching engaged students and *preaching to the converted* (CA:32). This indicates the need for GRs and CAs to revisit their written and NPC and communicate their concerns about the long-term impacts of the COVID-19 pandemic for the benefit of all actors operating within the career ecosystem.

## 5.3 | Theme II: Virtual recruitment

The theme 'Virtual Recruitment' is defined as a collection of stages that cumulatively form an organization's selection process to determine which applicants should be offered an employment contract. Figure 3 presents the Graduate Recruitment Selection Process (GRSP) Model offering a roadmap of the thirteen stages involved based on the 36 semi-structured interviews. Stages 1–5 had already undergone a digital transformation before the COVID-19 pandemic except for a small number of SMEs where the low volume of hires did not represent a return on the investment required (Tarofder et al., 2017). However, the COVID-19 pandemic accelerated the digitalization of Stages 6–13 (Schlogl et al., 2021). The findings of the theme of Virtual Recruitment thus focus on Stages 6–13 from the assessment center phase onwards.

The COVID-19 pandemic provided a catalyst for technological innovation since it *sped up the process of using new technologies because we had no other choice* (CA:9). One of the most significant impacts was that *nearly all employers are now doing all of their assessment centers virtually* (GR:14). There has been a bit more appetite for games-based assessment within the assessment centers, *so there is more movement towards gamification and virtual reality* (GR:6). The digital transformation has provided opportunities for the optimization of resources. For example, *organizations are not paying their recruiters to travel or candidates to travel for assessment* (GR:14). *Time savings allow recruiters to be more productive* (CA:10). From *an environmental perspective, not printing loads of paperwork for assessment centers makes things much more sustainable* (GR:24). Furthermore, *incorporating new technologies can integrate different systems to make life easier* (GR:21). The time savings transcend the induction stage, whereby *COVID-19 forced us to make the inductions shorter and virtual, but this had little impact on its effectiveness and meant that graduates got stuck into their role a little bit quicker* (GR:16).

However, *onboarding is a problem that is very hard to administer online and will take time to find a solution* (GR:28). Moreover, there were concerns that *there may be changes in how employers interact with international hires regarding*
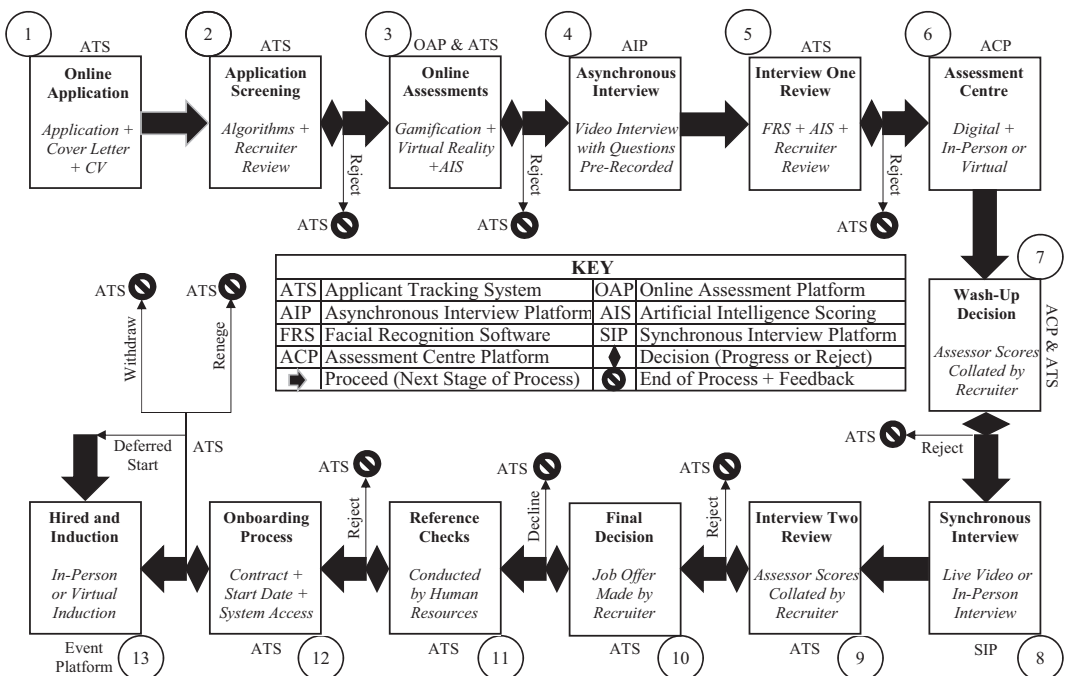


**FIGURE 3** Evidences the graduate recruitment selection process (GRSP) model

*visa restrictions and international travel restrictions* (CA:10). These concerns from CAs were confirmed by GR:2, who said *we had to withdraw an offer because their contract was for working in London, but they could not travel to London because of the pandemic, and the London pay would be much higher than the pay in their country*. A broader issue of concern was the pipeline issues that may play out over the next few years. In *finance and professional services, there was a 56% year-on-year drop in the number of internships and placements being offered* (GR:31). This is significant since *internships are the main route for hiring a large percentage of their graduate intake for the following year, but these have not happened as they usually would* (CA:1). There also remains some resistance to an entirely virtual selection process. Both GRs and CAs believe that the assessment center may stay *on a digital platform, but people will come into the office to do the assessments on a laptop* (GR:21). Finally, there was a desire for the *selection process to be as engaging and authentic as possible, which is challenging in a virtual capacity because you lose that sense of engagement and opportunity to present the offices and atmosphere* (GR:35). The dominant view of GRs and CAs is that final interviews would return to an in-person setup when permitted, as it is easier to pick up on social cues from candidates. This acknowledges that employers feel that they can overcome information asymmetry by interpreting signals of employability from applicants more easily in-person than virtually when making a final hiring decision. Overall, the COVID-19 pandemic appears to have *helped organizations adopt a more streamlined and effective process for selection* (GR:23).

## 5.4 | Theme III: Diversity and social inclusion

The theme 'Diversity and Social Inclusion' is defined as the objectives that an organization sets and its strategies to secure early career talent representative of the broader population rather than overrepresenting any specific demographic.

The shift to virtual attraction activities meant that *organizations could meet their diversity agendas through targeted events much more easily online than they would have been able to do on campus* (GR:25). This view was supported by GR:21, who stated that they would *like to do some more bespoke events online to target specific demographics and continue to use social media advertising to access diverse groups of people*.

Unfortunately, the overwhelming view shared by GRs and CAs was that the drive for e-recruitment via technological transformation during the COVID-19 pandemic could have unintended consequences that negatively impact diversity and social inclusion agendas. One concern was that *technology may rule people out for the wrong reasons* (GR:6), that *a lot of organizations are panicking that they have a bias in their algorithms* (GR:25) and that *it will probably take a couple of years to see what impact technology has had on the type of graduates hired* (CA:34). A further shared concern was articulated by CA:7, *while everyone is jumping on the technological bandwagon, you need to be mindful of issues of digital poverty*. This included *candidates with slow internet connections using 3G* via *a mobile phone because they do not own a laptop* (GR:35), candidates *sharing one phone per household* (GR:24) and candidates who *lacked access to a private space* (CA:33). A broader concern by CAs was the hope that *social mobility is more than just words* (CA:7) and those *organizations do not become more selective and reduce the number of universities they visit in the future* (CA:3). Organizations need to be made aware of these concerns since it is likely that if CAs are thinking this way, other actors within the career ecosystem may be as well.

## 5.5 | Summary: RQ1. What opportunities exist for organizations investing in technology as a talent management strategy for recruiting early career talent?

Organizations should harness the pandemic and its opportunity to overcome resistance to change to act as a catalyst for technological innovation and digital transformation within early career recruitment. Investment in new technology can provide opportunities for system integrations leading to increased levels of efficiency. The approach can enable organizations to target specific demographics of students via virtual talent attraction methods. Technology

can help to reduce costs and time associated with travel. Lowering levels of printing can benefit the environment. Additionally, shorter formats of virtual inductions can reduce the lead time for new joiners to join their teams.

## 5.6 | Summary: RQ2. What are the risks or threats to organizations from investing in technology as a strategy for recruiting early career talent?

Organizations voiced concerns about the challenges of differentiation in a virtual environment from a marketing and branding perspective. They felt that an utterly virtual assessment process lacked an authentic recruitment experience, and virtual onboarding barriers were prevalent. Perhaps the most significant investment risk in technology comes from the potential to deepen existing social inclusion issues, reflecting the Black Careers Matter report (Institute of Student Employers, 2021). Organizations need to be aware of digital poverty, the lack of quiet spaces impacting some candidates, and the risk of unconscious bias embedded within algorithms.

## 5.7 | Summary: RQ3. What role do meso-level actors play in recruiting early career talent? More specifically, to what extent do the views of GRs and CAs as agents of organizations and higher education institutions align or diverge?

Our findings indicate a substantial degree of alignment between the views of GRs and CAs. However, CAs perceived that virtual events risk GRs doing their own thing making it harder to meet their employer engagement targets and potentially threatening the diversity and social mobility agendas. This suggests that CAs need to voice these concerns to GRs and articulate how they can add value to the recruitment process. Equally, GRs need to be aware of these concerns and recognize that CAs are a valuable source of information and support to GRs in the development and sourcing of early career talent. This emphasizes the need for an updated contract of engagement between the two actors, including a discussion of the NPC to ensure that digital transformation benefits all actors operating within a career ecosystem.

# 6 | DISCUSSION

## 6.1 | Theoretical implications

Our paper advances our understanding of CET and extends previous integrations of the NPC as a theoretical framework that historically has focused on the relationship between employees and organizations (e.g., Baruch & Rousseau, 2019; Donald et al., 2020). We focus on the dyadic relationship of the meso-level actors operating within a career ecosystem of GRs and CAs (Holmes, 2013). This encompasses the underlying aspects of the NPC of unwritten and unspoken rules that form an agreement between two parties (Rousseau, 1995). Our focus on meso-level actors addresses their underrepresentation in empirical research (Minocha et al., 2017; Shirmohammadi et al., 2021), including the impacts of the COVID-19 pandemic on them (for an exception see Donald et al., 2021). Moreover, we incorporate technological transformations into CET and NPC theories in recognition that the success and sustainability of new technologies and processes rely on overcoming structural ambiguities and engaging a wider set of actors in the process (Mulder, 2021; Vereycken et al., 2021). This emphasizes the need for research to explore human-technology intersections, talent management, and careers (Kim et al., 2022).

We identified a substantial degree of alignment between the views of the meso-level actors, which is crucial, given their reliance on each other for shared benefits of early career talent in organizations and enhanced league table rankings for universities (Tomlinson & Anderson, 2020). The substantial degree of alignment is encouraging,

given the acceleration of technological transformation due to the COVID-19 pandemic (Schlogl et al., 2021). Yet, GRs and CAs need to continue communicating and collaborating, particularly given the challenges of personnel turnover and risks to diversity and social inclusion agendas (Donald et al., 2021). Additionally, the COVID-19 pandemic has reduced resistance to change, including technological change (Hodder, 2020). This offers an excellent opportunity for GRs and CAs to re-evaluate their dyadic meso-level relationship within a wider career ecosystem to maintain sustainability, beyond individual career sustainability (Petruzziello et al., 2022). Any assumptions and concerns should be discussed and documented when the NPC may not be sufficient.

## 6.2 | Practical implications

The practice of embedding technology into the preparation, attraction, and selection process for early career talent is not specifically a new phenomenon. Organizations recognized before the pandemic the need to invest in technology to streamline their operational activities (Tarofder et al., 2017). However, organizations were not prepared for the disruption of the COVID-19 pandemic as a global chance event and subsequently, they underwent five years of digital transformation in four months (Donald et al., 2021). Our practical implications address three topic clusters within HRD literature (i) HRD interventions and outcomes, (ii) national HRD, and (iii) career development (Shirmohammadi et al., 2021).

Our study highlights that the significant investment in technology during the COVID-19 pandemic has offered benefits and risks for organizations concerning HRD interventions and outcomes. Organizations can undertake more targeted marketing and events, reduce travel and environmental impacts, automate or streamline more of the selection process, and target specific demographics to meet diversity and social inclusion targets. However, organizations found it difficult to differentiate from competitors, challenging to engage students via online marketing, experienced issues with virtual onboarding, and faced concerns around digital poverty and algorithm bias. Subsequently, the applications of technology continue to evolve. For example, the suggestion by one of our participants that assessment centers could continue to be run in a digital format but would take place at the organization's office to overcome digital divides, is a positive move forward.

Additionally, it is likely that GRs will spend more time using technology, so less time traveling around the UK, indicating a shift in the nature and requirements of their roles. This can help HR departments and managers to focus on strategic directions for recruiting early career talent and development at later stages, as their teams can spend more time together (in-person or virtually). Teams can use the data from previous recruitment cycles to identify where applicants are dropping out of the process and seek to modify pre-application support or the application process itself. This will help to guard against some of the risks concerning access to students and recent graduates while offering feasible actions to realize diversity and social mobility agendas. It can also help identify which in-person experiences can and cannot be adequately replicated via digital transformation concerning engagement and authenticity. For example, organizations need to prepare potential applicants for navigating digital technologies as part of the recruitment process, since there are concerns that automated interviews can be hard to understand. Such challenges can lead to emotional and cognitive exhaustion and remove the human element due to a lack of interaction between the applicant and the interviewer (Jaser et al., 2022).

At the national level, CAs, via systematic identification of fit between individual graduates and the needs of employers, can use university data to meet the needs of the industry in general and of specific prospective employers. This can be done at the skill level, or within and between values and other expectations. For example, some employers insist on their employees working from the office, while others are open to hybrid or working from home (Spataro, 2022). Similarly, graduates have their preferences of working either in the office, hybrid or from home and this factor can be another part of determining the match between the individual and the employer (Minahan, 2021). Additionally, Buckholtz and Donald (2022) suggest that CAs and GRs should identify their respective needs and resources to identify strategies and direct outcomes that can lead to win-win relationships,

respectively. This will be crucial, since university career services lack the resources to deal with the demand for their services from students, while organizations have a vested interest in providing training and development opportunities to prepare graduates for entry into the labor market and to navigate the future of work (Donald et al., 2021). The adoption of technologies can facilitate such relationships and scale up the provision of support that can be provided compared to having to physically attend each individual university. The practical implications from our study thus have the flexibility to be adapted and subsequently applied to other sectors through the fostering of partnerships between CAs and GRs as agents of universities and organizations respectively.

Moving to the global level perspective, while the study was carried out in the UK, it may well represent most of the OECD countries and some non-OECD countries since the accounting, banking, and finance sector relies on a global talent ecosystem with high levels of standardized market regulation (HM Treasury, 2022). However, there may be differences in values and cultures, an example being the use of Guanxi in China focusing on trust and mutual obligations between actors (Barbalet, 2017). There may also be variances in educational systems including the investment of public funding and the opportunities to undertake tertiary education or the opportunities to acquire labor market experience during one's study.

Finally, this study offers practical implications from a career development perspective. Organizations seek early career talent with the necessary skills, qualities, and mindset to thrive in the workplace and offer a competitive advantage (Han & Stieha, 2020). This study can help organizations and universities to work more closely together within a career ecosystem via the NPC. The university CAs can share information with GRs on the strengths of their specific students and the areas where additional support is required. The GRs can share feedback and advice with CAs so that CAs can best prepare their students for the attraction and selection process. The GRs can use this partnership with CAs to run tailored events for students and access employable individuals ahead of the competition. The outcome is enhanced employability and employment chances for students and recent graduates and a higher quality of applicants for organizations from which to hire their internship, placement, and graduate cohorts (Minocha et al., 2017). Subsequently, there is a need for increased levels of communication between these meso-level actors as they operate within a career ecosystem to address information asymmetry and enhance the NPC by challenging and addressing any assumptions regarding the other party. Moreover, there is a need for organizations to focus HRD strategies concerning career development outside the boundaries of their organization. This can only be achieved by partnering with other actors in a career ecosystem to ensure that participation in higher education is an antecedent for career and organizational sustainability (Donald et al., 2020).

## 6.3 | Limitations and future research

Limitations of our research include reliance on self-reported data as is common in qualitative studies (Suter & Kowalski, 2021). Our research is bound by sector (accounting, banking, and finance), geographical context (UK), and perspective (the organization through the lens of GRs and CAs as meso-level actors operating within a career ecosystem). However, the findings of this study relating to the relationship between CAs and GRs may be applicable to other OECD countries and other sectors of employment offering an avenue for future research. The views of university students, applicants, and recent graduates may offer insights, particularly in 12–18 months when these groups have fully experienced the impacts. A longitudinal study may be beneficial.

Future research should focus on the digital transformation agenda in e-recruitment, including how different systems can be integrated and optimized. For this to be successful, e-recruitment strategies and broader organizational strategies will need to align, perhaps via more significant representation of early career recruitment personnel at the board level of organizations. A crucial dimension of this is a focus on diversity and social mobility during the design and implementation phases of the attraction and selection process (Bright Network, 2020; Trendence, 2020). For example, by looking at the data from previous recruitment cycles to see where candidates are falling out of the process to see if the process needs to be changed if the outcome of algorithms within e-recruitment simply reinforces pre-existing human bias.

Additionally, future research may benefit from exploring the opportunities for knowledge sharing between actors from different organizations and universities across different industries and geographical locations. Such research could overcome the challenges of limited resources and high levels of turnover by reducing the risk that best practices remain in silos rather than shared more widely between the actors within career ecosystems. The evolution of technology may require amendments to the NCP between various actors, requiring open dialogue and discussion. How these practices can be implemented while league table rankings place universities in direct competition with each other needs to be explored further (Buckholtz & Donald, 2022). Perhaps CAs and GRs should ask why Black and Hispanic students tend to have lower completion rates of their degrees and higher levels of unemployment or underemployment following graduation than white and Asian students (Cunningham & Jackson, 2020). How can technological transformation address these disparities?

## 7 | CONCLUSION

In summary, our study expands the findings of Schlogl et al. (2021) that the COVID-19 pandemic will act as a catalyst for digital transformation in discussions around the future of work. However, our findings indicate that a blended approach to recruiting early career talent is the desirable state following the removal of the COVID-19 pandemic-related restrictions. This paper advances and integrates CET and NPC as related theoretical frameworks by incorporating technological transformation, applying it to a new context of talent management, and focusing on meso-level actors of GRs and CAs within the career ecosystem. Our practical implications address (i) HRD interventions and outcomes, (ii) national HRD, and (iii) career development (Shirmohammadi et al., 2021). We offer opportunities for meso-level actors within the career ecosystem to collaborate and strive for win-win outcomes to maximize the benefits of technological transformation and overcome the limitations, benefitting all actors.

### DATA AVAILABILITY STATEMENT
Access to the dataset is not possible due to ethical approval restrictions.

### CONSENT
All participants provided informed consent before participating in this study.

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## APPENDIX A: INTERVIEW PROTOCOL

Participant Information
Gender, Role, Years of Experience, Age (18–24, 25–34, 35–44, 45–54, 55–64, 65+).

Interview Question 1
What changes to the graduate recruitment process (attraction and selection) do you anticipate due to the COVID-19 pandemic–if any?

Interview Question 2
What changes to the role technology plays in the graduate recruitment process (attraction and selection) do you anticipate due to the COVID-19 pandemic–if any?

Interview Question 3
What type of new technologies do you anticipate using in the graduate recruitment process (attraction and selection) due to the COVID-19 pandemic–if any?

Interview Question 4
What are the risks or threats of new technologies to the graduate recruitment process (attraction and selection)–if any?

Interview Question 5
How do you feel that the views of career advisors and graduate recruiters align or differ with regard to the graduate recruitment process (attraction and selection)?

## APPENDIX B: SALIENT QUOTES BY THEME

Appendix B provides three salient quotes for each of the three themes. CA refers to Career Advisor while GR refers to Graduate Recruiter. The number denotes the participant number. For example, GR:14 would refer to a Graduate Recruiter who was participant number 14 in the study.

| Theme | Salient quote |
| --- | --- |
| Employer Branding | Lots more is being done online in terms of the attraction and branding process. Social media is becoming a real go-to for students and employers being able to interact. So I would anticipate a lot more of that. I think employers will use it more in terms of teaser campaigns and attraction campaigns for branding (CA:29) |
| | So I think the attraction piece, yeah, companies will be investing heavily in social media and investing in social media campaigns as part of their employer branding strategies so they can target more students from more universities as long as they can engage students successfully and differentiate themselves from competitors (GR:35) |
| | I do not think virtual events long-term is something that would stick because I think it is really difficult to recreate that same level of engagement compared to in-person attraction events (GR:16) |
| Virtual Recruitment | Things like gamification and various different interactive ways of engaging with talent via apps, smart phones, different engagement platforms. So, video interviewing and interactive assessments and gamification is probably the big one (CA:34) |

(Continues)

| Theme | Salient quote |
|---|---|
| | We've had some companies in touch to say they have changed the format of their assessment day to include group exercises using Zoom and breakout rooms in Zoom. So what you might see is as recruiters move away from more traditional aspects, you might have more virtual assessment centers that are more inclusive and are actually more streamlined as well for the recruiter (CA:11) |
| | So previously, before the pandemic, organizations were looking at using technology for recruitment, just even you know from an environmental perspective and not having to print loads of paperwork for assessment centers. So I still think there will be a role for technology in that way, in terms of making things easier and more sustainable (GR:24) |
| Diversity & Social Inclusion | If you are trying to attract a BAME, female applicant, for a role in Edinburgh then social media can be used through targeted advertising to find those people. If you are not spending a huge amount on campus activities you can redirect your efforts to spending it on Facebook or Instagram advertising to try and find those people instead to meet diversity targets (GR25) |
| | There's probably going to be a lot more automation and algorithms as well because this technology is making it easy to sift through candidates to deal with lots of applicants per job. I've seen it done well and I've seen it done badly, and there needs to be consideration around diversity and inclusion about how that technology does not rule people out for the wrong reasons (GR:6) |
| | I would say from the other side of it as well there are obviously concerns from our (university careers service) point of view in terms of level of access, you know digital poverty, for example, how students actually do access technology, do they have to correct or best internet connection, do they have the best technology on hand to compete with other people who are other candidates for those (graduate) positions? So digital poverty is a worry (CA:10) |