Does the changing world of professional work need a new approach to accounting education?

Ian P. Herbert\textsuperscript{a}, Andrew T. Rothwell\textsuperscript{a}, Jane L. Glove\textsuperscript{b} and Stephanie A. Lambert\textsuperscript{a}

\textsuperscript{a}School of Business & Economics, Loughborough University, Loughborough, UK; \textsuperscript{b}Birmingham Business School, University of Birmingham, University House, Birmingham, UK

\textbf{ABSTRACT}

The paper raises concerns about entry-level positions within large organisations as corporate accounting tasks are re-engineered, automated and relocated. Reduced opportunities for accounting graduates to start their careers are but one factor in a confluence of challenges to accounting education; not least, that in England and Wales study debt is around £50,000 for a typical degree programme. Drawing on discussions from an education/employer stakeholder group, the enquiry finds that longstanding tensions about the optimal mix of intellectual, technical and generic skills in accounting education might be better framed within a broader process of helping students to develop a social identity relevant to their work context. A key proposal is that educators should play a pivotal role in mentoring students so that they develop their own sense of preprofessional identity and thus, become work-ready on graduation.

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The cost of going to university is increasing, but many graduates do not end up in jobs requiring a degree and will not be able to pay back their loans.

Lord Forsyth, Chairman of the Economic Affairs Committee, UK Government

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\textbf{Introduction}

The paper raises concerns from practitioners about the relevance of accounting education in the context of a confluence of challenges arising in the fields of work and education, not least, pressures on faculty resources, substantive study costs in England and Wales, and a potential reduction in corporate accounting roles in large organisations. Hence, we ask, does the changing world of professional work need a new approach to accounting education? To answer this question, we first explain the nature of the various challenges facing graduates in higher-income countries, such as the United Kingdom (UK). Then, we ask how an alternative approach to accounting education,
based on students developing a sense of preprofessional identity, might improve graduate work-readiness in order for them to compete for digitalised work in a global market place?

The enquiry is relevant and timely because new work methods are eroding entry-level work and hence, opportunities for graduates to gain early career experience of workplace skills, knowledge and behaviours. Without such experience the development of a sustainable career in accounting becomes more difficult. The paper will argue that, in the light of increasing pressures on faculty resources, educators should encourage students to relate lessons from a wide range of pre-graduate work experiences to their target career and mentor them in developing an individual workplace identity. Although the study has a UK focus, the forces of process redesign, automation and offshoring to lower-cost locations through the shared service centre (SSC) model are applicable to other high-income countries. Similarly, graduates in those countries presently receiving digitalised accounting activities will, in turn, have to compete with emerging forms of process automation and even lower-cost areas in order to retain work. Understanding the consequences of the changing nature of corporate accounting in large organisations is important for accounting educators, professional bodies, employers, and national governments.

The enquiry drew on extant literature along with the views of three practitioner informants to shape a mixed-method empirical research programme. Data gathering involved visits to large organisations with SSCs in the UK and overseas, along with a series of discussions with practitioners, professional bodies, accounting educators, representatives from the UK Government and students.

There is a long-standing debate between accounting educators and employers about the relevance of accounting degrees (Evans, 2014). Not least, which party should take responsibility for developing rounded individuals that can quickly contribute to organisational life and build a life-time career (e.g. Boyce et al., 2019). This tension is amplified by rapid developments in technology and the recasting of accountants as ‘knowledge workers’ rather than technicians (Howieson, 2003). During a longitudinal enquiry into the transformation of the accounting function (Thambar, 2012), two authors were alerted to the role of the SSC model in aggregating a range of corporate accounting activities from across large, multi-divisional, organisations to re-engineer, automate and relocate work processes. Our case organisations were claiming significant reductions in headcount and efficiency savings, often through moving work offshore from higher-income countries, such as the UK, to lower-cost areas (Rothwell et al., 2011).

Our first insight into the potential impacts of this ‘new world of work’ (Hooley, 2018) for accounting education came in 2009 during an interview with a very senior accounting executive within Oilco (name disguised), one of the world’s largest companies. As the head of Oilco’s SSC network, he explained how overseas graduates were hungry for good quality work in prestigious companies, adding, ‘they are prepared to work any shifts I offer them to get their work passport stamped at a world-class company’. We assumed that these must be low-level clerical roles, but that was quickly corrected as he continued, ‘…and these are roles right across accounting, from invoice processing up to forecasting and budgeting and, potentially, even business partnering’.

Concern about the state of work-readiness in graduates by employers is not new (cf. Jackson et al., 2013); however, this executive was arguing that the ongoing digitisation of
entry-level employment means that the expanding pool of accounting graduates across the world is now available to large organisations seeking to relocate ‘back-office’ functions to lower-cost locations (Howcroft & Richardson, 2012). Finally, he asked us, somewhat directly, ‘What are UK business schools [as the ultimate governors of accounting education programmes] doing about the potential extinction of graduate accounting jobs?’ adding,

I think there are more and more talented people [offshore] invested with the experience of operating these [business support] processes who will ‘eat their lunch’ [of professionals in higher-income countries] in terms of knowing how best to design and operate a world-class process. (Rothwell et al., 2011)

Three years later (2012), similar concerns about accounting education were put to us by two senior consultants (both qualified accountants) from a management consultancy which advised organisations on how to redesign and offshore accounting work. As they saw the situation, the traditional study first, work later approach was no longer sustainable. They argued that, without entry-level work, it is difficult for accountants to understand where the ‘numbers’ come from, how they are put together and by whom? Moreover, graduates need a period of ‘apprenticeship’ to observe the outlooks and dispositions of seasoned professionals, thereby absorbing the practices and ethical behaviours associated with being a trusted professional inside business: in other words, to become work-ready.

Based upon these concerns, the broad aims of this separate enquiry are threefold. First, to reconsider the relevance of accounting degree programmes in the new world of work. Second, to understand how entry-level accounting jobs are being lost in large organisations and the impact on graduates faced with high study costs and global competition for digitalised accounting work. Third, to consider the notion of work-readiness as complementary but additional to university designed employability credentials.

**Contribution**

The enquiry raises awareness of the ‘new world of work’ and notes some implications for accounting education. It challenges long-standing assumptions in the literature that it is incumbent on tutors to integrate workplace skills, knowledge and behaviours into curricula and pedagogy. In the light of constraints on faculty resources, the ubiquity of university-led employability credentials, along with doubts about the extent to which classroom experiences can simulate behavioural experience authentically, the paper will argue that tutors should, alternatively, mentor students in helping each student to see the relevance of their work experience to their individual career pathway. The paper extends the literature on the formation of preprofessional identity and updates existing concerns about the relative value of employability credentials. The findings are relevant to accounting educators, professional bodies, employers and national governments.

The next section reviews the relevance of the longstanding accounting education debate in the context of workplace identity and changes in the fields of work and study, particularly the nature of the SSC model. The third section describes the research methodology and methods. The fourth section presents and discusses the findings. The
final section makes some concluding remarks before making a call to action on the part of accounting educators, employers and professional bodies. The final subsection notes some limitations of the empirical data gathering and makes some suggestions for further research.

Note: Corporate accounting activities, such as financial accounting, management accounting and internal audit, take place within organisations and are distinct from public practice accounting comprising mainly external audit and taxation work. In this enquiry, the concern is for corporate accounting in large organisations and excludes small- and medium-sized enterprises (SMEs).

Literature review

The relevance of accounting education debate

Galvanised by the Dearing Report (1997), successive UK governments and employer groups have urged universities to be more responsive to vocational needs and place greater emphasis on the development of generic skills within the curriculum (cf. Crawford et al., 2011). Alternatively, labelled as transferable or soft skills (Arquero Montano et al., 2001), generic skills typically cover personal, interpersonal, number and technology skills (see PINT framework – Herbert & Rothwell, 2004). Over time, several skill frameworks have been proposed with a variety of constituent skills sets (e.g. Arquero IFAC, 2010; Jackson et al., 2013; Montano et al., 2001; QAA, 2008). The notion of ‘employability’ emerged to infer a more general sense of ‘graduate-ness’ that would help one to get a graduate-level job (Bourner et al., 2011; Roepen, 2017; Rothwell & Rothwell, 2016). Although, some scholars have argued that employability is a relative concept (Tomlinson, 2008). Indeed, a greater supply of graduates does not result, necessarily, in more graduate jobs and concerns about graduate unemployment and underemployment persist (Helyer & Lee, 2014; Rothwell & Rothwell, 2016). As Hirsch (1997) drily observed, ‘If everyone stands on tiptoe, no-one sees further’ (p. 5).

Yet, striking an appropriate balance between (1) the development of intellectual skills for mid-level roles (e.g. analytical and critical thinking), (2) the technical skills (concepts and techniques of accounting) and (3) a preferred range of generic skills, has been central to a longstanding expectation gap between educators and employers about the preparedness of graduates for working life (Bui & Porter, 2010; Jackling & de Lange, 2009; Jackson & Chapman, 2012; Webb & Chaffer, 2016). Similar concerns have been expressed in other higher-income countries, e.g. Australia and New Zealand (Jackson et al., 2013; Jameson et al., 2012; Wells et al., 2009) and the United States (US) (e.g. Albrecht & Sack, 2000; Bolt-Lee & Foster, 2003).

Responses from accounting education and further challenges

In response, individual accounting educators have sought to strengthen vocational relevance by rebalancing the emphasis between academic content and employability attributes (Boyce et al., 2019), along with improving pedagogy and assessment practices (e.g. Berry, 1993; Boyce et al., 2001; Watty, 2014). Yet, despite various calls for accounting pedagogy to be positioned more broadly within its socio-economic context (Chabrak
Craig, 2013) it may be that accounting education lacks the capacity to change? Hopper (2013) argued that numerous institutional pressures confound the aspirations of accounting education to bolster its intellectual credentials. He warned that with rising student debt, accounting degrees might come to imitate professional accounting courses; saving training costs for employers, but diluting the rigour and scope of university curricula that are already full (cf. Carmona, 2013; Jameson et al., 2012). According to Flood (2014), much effort in the classroom has yet to achieve a more purposeful strategy overall. She concluded that ‘... there is scope to cater for both the vocational, work-based demands of the profession, and also the arguments by educators for a more rounded, critical approach to accounting’ (p. 97), although she did not suggest how this might be achieved. Howcroft (2017) concluded that the lack of graduate preparedness is only likely to get worse due to deteriorating staff/student ratios and other academic pressures; despite the well-meaning intentions of individual tutors and teaching teams in developing innovative pedagogies (see also Evans et al., 2010; Samkin & Schneider, 2014). The pressure on universities to cede to student demands for degrees that maximise exemptions from professional accounting examinations (i.e. higher technical content) will likely stymie aspirations to develop students’ intellectual capabilities (Guthrie et al., 2012). Indeed, Rodgers et al. (2016) noted that the integration of experiential learning and conceptual learning ‘... in educational settings closely connected to professional accrediting bodies is, however, currently under-acknowledged and under-researched’ (p. 188).

Notwithstanding, the concerns above, the expansion of mid-career advisory roles, e.g. business partner (BP), through advances in business intelligence technology, should increase opportunities for accounting graduates and emphasise the importance of intellectual and cognitive abilities. However, the nature of the BP role is multi-faceted (Burns & Baldvinsdottir, 2005), ambiguous (Byrne & Pierce, 2007) and increasingly contested. For example, Burns and Yazdifar (2001) warned that the ‘nebulous’ nature of the BP role makes it ripe for the incursion of other professional groups and technical specialists, such as engineers, who might ‘have supplemented their core business knowledge with an accounting qualification’ (p. 35). Indeed, it may be that, without the in-depth knowledge of accounting that is gained in early-career roles, accountants will come to have little competitive advantage in mid-career over non-accountants for roles, requiring new skills in, say, data analytics, cybersecurity and business intelligence (CIMA, 2015). The desirability of specialist subject knowledge (e.g. engineering, chemistry, etc.) underpinned by some accounting knowledge may, in part, explain the growing popularity of joint degrees. Douglas and Gammie (2019) found that while the number of accounting vacancies exceeds accounting graduates in the UK each year, the ‘Big 4’ public accounting firms prefer to recruit non-accounting graduates due to perceptions of stronger non-technical skills.

The formation of professional identity and the role of work experience

In their seminal work on intergroup identity, Tajfel and Turner (1979) explained how the notion of social identity could be understood in terms of the extent to which individuals perceived themselves to be ‘inside’ or ‘outside’ of a certain group. An inside identity is formed through being acculturated into the values, behaviours and dispositions that
are held by other workers and which, in the case of accountancy, are also aligned with membership of a professional body (Caballero & Walker, 2010; Freudenberg et al., 2011; Jackson, 2016; Lambert et al., 2020). The terms workplace socialisation and familiarisation (Roepen, 2017) suggest that the development of a workplace identity is as much about a process of change as the achievement of a particular mindset or set of university conferred employability credentials (see also Nortcliffe, 2012; Tomlinson, 2010).

Indeed, Scanlon (2011), used the term becoming to highlight ‘the evolutionary, prosessual nature of developing a professional self’ (p.14). Trede et al. highlighted the necessity of a sense of being in the development of professional identity in a complex world, arguing that it ‘requires students’ active engagement and agency in conjunction with appropriate support and mentorship from academics’ (2011, p. 378). Bishop (2017) also argued that accounting students needed to draw on personal agency to shape the optimal set of dispositions in the context of divergent workplace practices and called for further research on the process of professional development.

In accounting, many entry-level tasks, such as transaction processing, posting journal entries and accounts reconciliation, whilst appearing mundane can, nonetheless, still provide valuable formative experience for a life-long professional career; especially, if there is progressive task development (Youngdahl & Ramaswamy, 2008). Immersion into the granularity of accounting systems and routines enables trainee accountants to understand the fundamental mechanisms and assumptions that underpin accounting statements throughout their careers. Lepistö et al. (2018) found that it can also be the experience of suggesting improvements to systems and work practices that provides opportunities for personal development, irrespective of the nature of the underlying task.

In the context of higher education (HE), work-integrated learning (WIL) tends to assume a period of full-time employment within a programme of study (sandwich degree), as an arranged placement (internship); typically for several months up to one year and accredited directly or indirectly (e.g. Albu et al., 2016; Brooks & Youngson, 2016; Little & Harvey, 2006). Alternatively, work relevant to learning (WRL) is where a student has likely found their own job but, while learning is not accredited formally, the work is broadly relevant to their degree (e.g. working part-time in an accounts office). By contrast, generic work experience typically comprises casual work, paid or voluntary, often in retail outlets, bars, restaurants, shops, voluntary and community projects. The chief aim is to earn money for subsistence/pleasure while also accumulating evidence of general employability attributes, such as, motivation, trustworthiness and good timekeeping. Part-time work can be an important source of early work experience, but its availability is declining for a variety of reasons (see ‘Death of the Saturday job’, Conlon et al., 2015).

In 2012, the two management consultants had argued that even seemingly non-relevant (generic) work experience could still produce learning outcomes relevant to the degree being studied if students could be encouraged to analyse the component work tasks and observe their use of skills and behaviours within the working environment. Work experience needed to be related to a student’s intended work environment and career pathway. For example, a student working in a chain of coffee shops may record on their CV that they entered sales transactions into the cash till and gave change to customers; evidencing that they are numerate, trustworthy and can ‘handle’ money: generic
employability skills. An alternative perspective might see this as exposure to sophisticated point-of-sale systems that produce rich accounting data, enabling managers to monitor and control performance remotely across numerous similar outlets.

Put simply, there may be an opportunity for a new emphasis in accounting education in which students, with support from tutors construct their own mix of skills and behaviours relevant to themselves, based on work experience in their particular organisational setting (Bishop, 2017; Helyer, 2011). Indeed, the notion of ‘work-based learning’ (WBL) (Raelin, 1997), may be more appropriate to describe how an ethos of learning from work, rather than learning about work, might help to inform the design of future accounting curricula.

Figure 1 shows schematically how university study and work experience might combine to form a preprofessional identity on graduation. Reading from the left, the three strands of an accounting degree (intellectual, technical and generic skills) are supplemented by different elements of generic and relevant WBL into the twin outcomes of general employability and more specific work-readiness. The performance of entry-level work develops the ‘craft’ of a professional vocation and internalises behavioural norms (Reid et al., 2008). The larger dashed outlines indicate that delineation between categories is unlikely to be precise in practice. Relevant WE (work experience) includes WIL (work-integrated learning – likely full-time) and WRL (work-related learning - part- or full-time work). Movement between the line from t₀ to t₁ depicts a conjectured reduction in employer-led graduate training programmes as responsibility for training is moved to students (Hooley, 2018).

There are some excellent schemes of WIL in the UK, based on full-time study plus, episodes of work experience mainly offered by the ‘Big 4’ accounting firms. For example, the Nottingham University’ Flying Start’ course (in conjunction with PricewaterhouseCoopers and the Institute of Chartered Accountants in England and Wales). Although, we are unaware of any equivalent scheme running through the duration of an accounting degree programme focussed on developing corporate accounting skills.

![Figure 1. The formation of preprofessional identity.](image-url)
The transformation of accounting and its significance for accounting education

Corporate accounting as a business support service within large organisations is undergoing a long-term process of transformation, notably through the new organisational form of the internal SSC model (e.g. Richter & Brühl, 2017; Smith et al., 2005). The SSC model is similar in many respects to Business Process Outsourcing (BPO); but, crucially, retains control over the scope and pace of the change process (Gospel & Sako, 2010). Quinn et al. (2000) suggested that an ‘easy’ 25–30% reduction in costs is possible; with the promise of further improvement as the SSC itself becomes threatened by relocation to even lower-cost areas, or transferred to a BPO vendor. A popular misconception is that accounting transformation is primarily about new technology. The reality is that many of the efficiency savings arise in three largely non-technological ways. First, quasi-commercial orientation, governed by service level agreements (SLAs) with client divisions, creates management visibility over accounting costs and performance. Second, a range of improvement methods pioneered mainly in manufacturing and operations management, eliminate waste and streamline workflows. For example, business process re-engineering (BPR) system standardisation, multi-disciplined process team working, Lean principles, etc. (cf. Ulbrich, 2006). Third, the digitisation of accounting tasks (Bhimani & Willcocks, 2014) and internet connectivity allows work to be moved to lower-cost locations (Howcroft & Richardson, 2012). As professional services tend to be labour intensive, efficiency savings translate primarily into job losses onshore that is in higher-income countries such as the UK, although other jobs are created offshore (Rothwell et al., 2011). The significance of the SSC model for this paper is that activity migration tends to be piecemeal and gradual; hence, the impact of change is mostly hidden from accounting educators (Herbert & Seal, 2012). The restructuring process is depicted in Figure 2.

![Figure 2](image-url)
In phase 1, operational activities formerly embedded within multiple business units (x, y, z), e.g. sales ledger and payroll, are aggregated within an SSC. Using BPR techniques, work procedures are simplified, systems/protocols are standardised, and duplicate tasks are eliminated (Kakabadse & Kakabadse, 2000). The new ‘atomised’ task units can then be allocated by workflow software to individual workers sitting within end-to-end business process streams, e.g. ‘order-to-cash’. Higher-level, more cognitively demanding, activities, such as business partnering, are retained, either in the parent country (RPC) or within business divisions (triangles x, y and z).

In phase 2, all data within accounting operations are digitised to allow work to be automated or moved offshore where it can be undertaken on a 24/7 basis at lower cost (see time–space distanciation, Quattrone & Hopper, 2005). More junior roles in the RPC activities, such as producing management information and data analytics, are moved into a separate ‘Centre of Excellence’ (CoE) to be similarly rationalised and redesigned, then governed by SLAs.

Stage 3 sees higher-level activities shrinking as work is routinised and pushed down to the level below. New ‘disruptive’ technology accelerates the removal of human labour in the form of robotic process automation (RPA) and artificial intelligence (AI) (Willcocks & Lacity, 2016). More worryingly, Nedelkoska and Quintini (2018) argue that automation will disproportionately affect jobs typically undertaken by ‘teenagers’, i.e. entry-level jobs. Greater use of customer-driven online self-service systems obliterates the need for accounting interventions (cf. Hammer, 1990). Finally, transactional work remaining in the SSC is contracted to a BPO vendor with the expertise and scale to reduce costs further. In time, higher-level work such as internal audit, management control and decision-making activities can also be moved offshore, to the now experienced SSC workers (Salijeni et al., 2018; Speklé & Kruis, 2007). The accounting function now resembles a virtual supply-chain of activities with significantly fewer direct workers. For UK accounting graduates this means fewer entry-level jobs and in turn greater difficulty in progressing to mid-career roles.

The confluence of factors impacting accounting careers

Students in England and Wales (E&W) have the highest level of study debt in the world from public universities – around £50,000 for a typical three-year undergraduate programme (Kirby, 2016). In addition to the income lost through studying for three years, the accumulated debt for study and living expenses is subject to annual increases for both interest and inflation from the point of graduation. Although, any debt outstanding after 30 years is written off (see Lewis, 2020 for total debt repayment calculator). Yet, despite the substantial cost, applications to HE in the UK, rose by 44.4% between 2009 and 2019 (UCAS, 2018). The rising participation rate, now almost 50% of school leavers (NAO, 2017), is driven largely by three factors: the ‘graduate premium’ resulting in 42% greater life-time earnings compared with non-graduates (NAO, 2017); claims about employability from universities, and increasing demand for skilled workers as higher-income countries reorient from manufacturing to services, and from manual to knowledge working (DTI, 1998); see ‘upskilling thesis’ (Heisig, 2009). However, finding evidence to support the upskilling thesis in national labour statistics is difficult, not least because of changing, ambiguous and sometimes inflating, job titles
(c.f. Anderson, 2009). For example, a purchase ledger clerk might be reclassified as an ‘accounts executive’.

In the timescale of this enquiry (2014–2015–2017–2018), accounting programmes rose 5.6%, from 33,770–35,660 students (HESA, 2018). However, student registrations for the six members of the Consultative Committee of Accountancy Bodies (CCAB), show a less rosy picture. While the data sets are not strictly comparable, there was a slight reduction overall in UK and Republic of Ireland (reduction of −0.6% compound between 2013 and 2017, compared with a steady growth of +2.7% in the same period overseas). Specifically, registrations to CIMA (essentially accountants working in corporate accounting roles) declined by 2.5% in the UK and rose by 1.0% overseas (FRC, 2018).

The various changes in the fields of work, education and global labour markets identified in the literature are shown schematically in Figure 3. Reading from the left: the new working methods of the SSC ‘flatten’ and segregate the various layers of the traditional accounting hierarchy. As work is relocated offshore (Howcroft & Richardson, 2012; Hutzschenreuter et al., 2011), a polarised workforce is created with senior executives and system designers/controllers at the top, but with a squeezed/disconnected middle (c.f. Goos & Manning, 2007; Nedelkoska & Quintini, 2018). This mid-career bottleneck (Rothwell et al., 2011), adds to the pressure on early career accountants to compete for scarce mid-level, advisory jobs against other management groupings. A further challenge is presented by accounting apprentices (typically starting after A-level studies and part-funded through the apprenticeship training level), who can readily perform the new atomised, workflow-controlled, tasks.

**Figure 3**. The confluence of factors impacting on graduate career sustainability.
**Literature summary**

Despite copious examples of innovation on the part of individual accounting educators, and a range of university-led employability frameworks, there is a continuing expectation gap between accounting education and those employers seeking work-ready graduates (Bui & Porter, 2010). Scholars such as Hopper (2013) and Howcroft (2017) have questioned the extent to which accounting education has the resources to effect more radical adjustment to a range of challenges.

**Figure 1** showed how various forms of work experience might contribute to the development of a PPI on graduation. We proposed that work-based learning (WBL) (Raelin, 1997) might be a more appropriate term to describe how the active agency of students could be fostered to engage with a wide range of work experiences, beyond the traditional availability of work-integrated learning schemes. This approach would require tutors to help students to see the relevance of otherwise mundane and non-relevant work experience, rather than tutors designing an idealised scheme of employability attributes. Through mentoring, students can be encouraged to understand which skills and behaviours *they* need to develop in order to align *their* social identity with *their* intended employment context.

**Figure 2** explained the various stages of accounting transformation through the SSC model and new work methods. Fewer entry-level roles mean fewer opportunities for graduates to learn the ‘craft’ of corporate accounting at the start of their careers which, in turn, reduces their ability to secure mid-level advisory roles. The digitisation of corporate accounting work enables employers to move work to lower-cost locations offshore. **Figure 3** showed how a confluence of pressures arising from the fields of work and education is challenging accounting education.

Accordingly, the following research questions (RQs) were formulated to guide the empirical data collection.

*RQ1: What is the potential for changes in the field of work to reduce entry-level roles in corporate accounting roles in large organisations?*

*RQ2: What support is required to help students develop their own preprofessional identity on graduation?*

**Research background and methods**

A mixed-methods approach was followed (Creswell & Clark, 2017) in three broad phases.

**Research Phase 1 – addressing RQ1**

This enquiry was born out of a longitudinal enquiry into the transformation of accounting functions that was following the development of 23 large organisations using the SSC model to increase the efficiency of accounting work. Over time, it had become clear that the other side of efficiency gains was job losses, particular, entry-level roles. Following the concerns raised by our key informants, the Oilco executive (2009) and the two consultants (2012), the authors of this paper commenced a further line of enquiry focused on the consequences of the SSC model for young people transitioning between education and employment.
Between 2014 and 2016, we visited nine accounting SSCs in the UK, Poland, Malaysia, South Africa and Sri Lanka that provided a representative cross-section of the SSCs of the 23 case organisations. Typically, each visit involved two researchers. The aims were to gauge the extent of work redesign and offshoring and evaluate the consequences for entry-level accounting jobs. Indicative questions were as follows. How many accounting jobs have been lost through work redesign, automation and offshoring? Which accounting activities are being eliminated/migrated, and are these transactional (entry-level) or transformational (mid-level) positions? What is the impact on graduate recruitment strategy? How do you see the future of accounting careers in the SSC model? The responses were usually highly contextual, depending amongst other things on the state of maturity of the SSC operation.

Research Phase 2 – addressing RQ 2

We also set up a stakeholder working group to explore, more broadly, how young people might be better prepared by universities to cope with changing career prospects. Representatives from across education, practice and government were invited to attend including: SSC managers, university careers officers, tutors, three management consultants (including the two initial informants), representatives from the local student union office, two executive officers from the UK Department for International Trade (DIT), and representatives of two CCAB bodies. The total membership was around 25 people, over the course of a series of seven meetings (2015-2017) which took the format of a professional forum. Typically, around 15–20 people would attend any single meeting (in person or via Skype). The discussions were held under ‘Chatham House’ rules and typically lasted between 60 and 90 min, except for the final two meetings (full-day and half-day respectively). The discussions were recorded wherever practical and transcribed professionally. Transcript data were further analysed using NVivo software which enabled keyword searching and preliminary analysis of the data. In the manner of progressive focusing (Sinkovics & Alfoldi, 2012), emerging themes from each meeting were identified and summarised by two of the researchers and fed back into future discussions. The early meetings (1-5) explored the nature and extent of entry-level job losses, together with the effects on graduate careers, while the later meetings (6 & 7) looked towards solutions. Some of the meetings were quite ‘free-ranging’ in their structure and content, due in no small measure to deeply held passions expressed by participants about the issue of job losses. The views of the consultants and officers from the professional bodies helped to confirm and widen the findings from the SSC visits.

The penultimate meeting consisted of a full-day event to consider, more specifically, how a WBL orientation might be structured and what would make it distinct from existing accounting education practices? A ‘world café’ format (Brown & Isaacs, 2005) was used to explore four aspects of work-based learning in greater depth: (1) benefits/opportunities, (2) problems/drawbacks, (3) barriers to implementation, (4) solutions to problems and barriers. This was followed by a series of participatory activities on key themes in breakout focus groups (Merton, 1987), each round followed by a plenary discussion. The final meeting was a half-day event (February 2017) to review and discuss the previous six meetings. Eight students in the 4th year of their degree (after a 12-month work placement) were also invited to join the meeting to contribute their thoughts on
the discussions and their own experiences of work. Four were accounting undergraduates, the others were studying more general business degrees (with some accounting modules), but had expressed interest in accounting careers. They were recruited by a student who had gained some interesting experience in an overseas work placement and who offered to identify fellow finalists who might also have had something to contribute. Note: in the section ‘Findings and Discussion’, participants have been anonymised and are referred to numerically, e.g. SSC Manager 1,2,3 … Student 1,2,3 … etc.

Research phase 3 – addressing RQs 1 and 2

The final phase was to gauge how generalisable the findings might be across a wider population of large organisations. We presented our findings to several SSC practitioner conferences to triangulate our data results and interpretations (Modell, 2009). The basic approach was to ask delegates: ‘This is what we have found, these might be the consequences for young people, please tell us if you think we are wrong’. Between 2016 and 2018, nine conference presentations were made in the UK, Ireland, Malaysia, Sri Lanka, the US, Italy, Australia (by Skype link, twice). One researcher accompanied a UK Government fact-finding mission on SSCs (2016) and presented the findings to six companies and two non-government organisations in Washington and New York in 2016. The practitioner presentations were mostly at international conferences organised by a specialist conference company (Shared Services and Outsourcing Network); typically, attracting around 500–700 delegates. We would ask for ‘a show of hands’ to gauge the extent of responses to questions, such as: to what extent is your organisation reducing accounting jobs? We measured the audience responses by estimating the proportion of raised hands to each question along the lines of a 5-point Likert scale. For example, reducing very significantly (reducing more than 30%); reducing slightly (reducing 10% to 29%); the effects of change on jobs are broadly neutral; jobs are increasing slightly (increase between 10% to 29%); jobs are increasing significantly (increasing above 30%). While these straw polls were not particularly scientific; nonetheless, we believe that they were valid in that we were actively seeking falsification of our findings and interpretations (Popper, 1959) by testing against the views of a broad sample of senior practitioners. We also elicited the opinions of participants after the presentations, inviting them to tell us their stories about work redesign and offshoring. On two occasions, we ran pre-conference workshops for 30–50 delegates on the theme of global graduate recruitment and talent management to allow for more intimate focus group discussions. As the enquiry progressed, we gave presentations to CIMA branch meetings in the UK, Sri Lanka, Malaysia and Singapore. Despite numerous requests and follow-up calls, no organisation would give its permission to be quoted on the actual extent of jobs being eliminated or moved overseas. Table 1 summarises the primary data activities across the three research phases.

Findings and discussion

RQ1: What is the potential for changes in the field of work to reduce entry-level roles in corporate accounting roles in large organisations?

Oilco, is a huge multi-national organisation with a total workforce of over 100,000. It is regarded as a leader in implementing the SSC model. At the time of the meeting with the
senior accounting executive (2009), the company was ten years into a long-term transformation of its accounting function. Our informant reported that around 5800 out of the original 12,000 accounting roles had been transferred to a network of SSCs, one onshore (in the UK) and another five offshore (Rothwell et al., 2011). By 2018, the offshore accounting population had risen to c.8500 out of c.11,500 total, and the onshore centre had closed (Lambert et al., 2020).

The managers of the four Oilco SSCs and the five other SSCs that we visited, confirmed that the changes taking place in the accounting function were consistent with the pattern of phased transformation of accounting functions depicted in Figure 2. Managers talked proudly of improving efficiency levels and pointed to graphs on the wall and empty desks’ out on the floor’ as evidence of efficiency savings; typically, around 20% to 30% in the first year followed by further annual savings of 5–10%, consistent with Quinn et al. (2000). When we asked about job losses, managers explained that impacts on individual workers had been mitigated through generous redundancy and retirement packages in the private sector, or natural labour turnover and recruitment freezes in the public sector. SSC managers considered that the new working methods and customer service ethos of the SSC model could improve most accounting activities, including higher-level, more cognitive, activities such as business partnering, management accounting analytics, internal audit, etc. (Rothwell et al., 2011). In several organisations, e.g. Oilco, the SSC had been established for over ten years, but was still expanding its activity scope, consistent with the literature that jobs were being ‘engineered out’ and offshored gradually (cf. Richter & Brühl, 2017; Seal & Herbert, 2013).

While the overall pattern of job reduction and offshoring was mostly consistent across the case organisations, each centre had its own organisational context, in situ managers were often not aware of the gradual squeeze on accounting careers. When jobs had already been moved offshore, the onshore graduate training scheme had tended to fade from the collective memory. Indeed, when we presented our interim findings to one UK SSC manager, she replied, ‘I’d never really thought about the impact on young people like that, my job is just to get rid of people’. Interestingly, accounting SSC managers were now seen as ‘process masters’ and no longer recruited exclusively from the

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**Table 1. Data collection and verification sources.**

| Source                      | Date            | Participants                          | Data collected                                      |
|-----------------------------|-----------------|---------------------------------------|-----------------------------------------------------|
| SSC site visits x 9         | 2014–2016       | Senior SSC managers n=18 overall      | Field notes and transcripts of formal interviews     |
| Working party meetings #1-6 | April-November  | Practitioners, educators (teaching &  | Meeting transcripts and summary notes. World-café |
| #6 = full day               | 2016            | careers guidance staff)               | sheets completed for each of four cycles.           |
| Meeting #7 – half-day       | February 2017   | As above + 8 students                 | ½ day format. Transcript and focus group flipchart |
| Field trip to the US        | August 2016     | Meetings with organisations (x6) and US|                                                      |
| Conferences                 | May to December | Government representatives n=22       | A wide range of questions on the research findings and |
|                             | 2017            |                                       | comments on the scale of the problem and solutions. |

Note: *Finalists with placement experience interested in accounting careers.
accounting function; alternatively coming from operations management and IT backgrounds, consistent with Burns and Yazdifar (2001).

The following comment (2014) from the London Head of Management Accounting for a large European bank illustrates how unintended consequences can arise from accounting transformation projects premised on cost savings.

I rang up HR and said, ’Please send me the next 20 trainee business partners’.

They replied ’Sorry, but we don’t have anyone this year. Don’t you remember, we offshored the training nursery [accounting operations] five years ago? Your department did the financial appraisal for it!’

In this particular organisation, the onshore graduate trainees now spend three years in the SSC in Eastern Europe to learn the company’s accounting systems and routines in-depth before returning to take-up advisory roles in London. However, even elements of this higher-level work were moving progressively to the SSC.

More positively, many managers were proud that their own SSC had become recognised as the training nursery for the overall accounting function. Senior workers who had developed an in-depth knowledge of the corporate information systems and had forged relationships with people in business divisions across the world, now had opportunities to work in those business divisions (Lambert et al., 2020); illustrating the potential of the SSC to support long-term career development (Lepistö et al., 2018). However, offshoring reduces entry-level job opportunities for UK graduates and weakens the relationships between employers and tutors, that are important when updating accounting curricula.

It was not possible to find any comprehensive quantitative data about changes in corporate accounting employment patterns (Anderson, 2009), and we were asked not to report any actual figures from our site visits. Thus, underlining our concern that the overall number of job losses occurring through use of the SSC model is largely unnoticed by the media and accounting educators, especially, when migration to an SSC occurs gradually.

At the SSC practitioner conferences, there was no significant disagreement with our findings about reductions in entry-level career opportunities in higher-income countries. The ’straw polls’ and the follow-on discussions with delegates, indicated that almost all SSC managers had ambitions to automate work processes further, move more transactional work offshore and to extend SSC operations to higher-level corporate accounting activities, such as management accounting planning and analysis, and business partnering. The more mature SSCs (15-20 years old) were also considering the transfer of some transactional activities (e.g. payroll and purchase ledger) to BPO vendors, consistent with Gospel and Sako’s (2010) model in which the endpoint of the transformation is BPO. The adoption of end-user operated ‘self-service’ systems is further reducing transactional (entry-level) work (e.g. Deloitte, 2011; Willcocks & Lacity, 2016). It was reported that any new training positions onshore are likely to employ accounting apprentices due to the availability of government funding. In sum, the findings were consistent with Figure 2 in terms of the transformation of accounting functions, and Figure 3 in terms of changes in the field of work.
**RQ2: What support is required to help students develop their own preprofessional identity on graduation?**

The initial discussions in the working group tended to play out along the traditional fault lines of the accounting education expectation gap (e.g. Bui & Porter, 2010; Howcroft, 2017). Practitioners accepted that intellectual skills are vital for a sustainable, long-term career. Still, they argued that UK graduates need to have a stronger sense of being ready for work at graduation if they are to compete collectively for ‘back-office’ work that might otherwise go offshore (Howcroft & Richardson, 2012; Hutzschenreuter et al., 2011).

As suggested by the literature, the term ‘work-readiness’, as distinct from employability attributes (e.g. Jackson et al., 2013), was used frequently. Managers were mindful that a two-year graduate training programme was becoming prohibitively expensive when compared to the total cost of employing a graduate overseas (typically around one-third of the UK cost). The SSC managers argued that personal development needs to go beyond the usual employability credentials (Tomlinson, 2008). Graduates now need to demonstrate that they have internalised a range of corporate behaviour, and built up a working knowledge of corporate information systems, procedures and protocols. Some managers indicated that they were now using the criteria of ‘work-readiness’ as a differentiating factor in recruitment. As Manager #6 put it, ‘there are now many appointable graduates with similar levels of academic and employability credentials’ (c.f. Tomlinson, 2010).

When we explored the notion of developing a PPI through work experience, there was overwhelming agreement that, while generic employability skills were vital for getting hired, work experience as a student provided an opportunity to ‘really change as a person’ (Student #7). In other words, to develop one’s own social identity inside a group (Tajfel & Turner, 1979), in this case becoming a professional accountant (cf. Reid et al., 2008; Scanlon, 2011).

One practitioner, an HR consultant, suggested that work-readiness was akin to an ‘X Factor’, difficult to describe but distinct from university-led employability (Tomlinson, 2008). The following quotes concur with the research by Caballero and Walker (2010) which found that students need to tailor their own skills and behaviours to the workplace, although managers stressed how difficult it is to both articulate and assess such qualities;

… qualifications are all well and good but actually what employers are looking for is becoming known as the five un-teachables. … These are character, energy, attitude, talent (to a degree), and determination. People need to bring those to the workplace; that’s what employers are looking for. (Manager 11)

I say, recruit for will and train for skill. As an employer, that’s what, in my business, the other 2:1s [competent graduates] can’t do. (Manager 14)

The SSC managers supported the view that even if work activities may appear mundane, they could still provide in-depth exposure to corporate systems, protocols, working methods and culture (Lepistö et al., 2018).

Students emphasised the importance of learning from mistakes in the workplace and ‘unlearning’ certain behaviours and mindsets from university. Interestingly, the process of learning from the repetition of skills and behaviours is valued by the students, but it
was noted that this is difficult to achieve in the classroom. For example, SSC managers and representatives from the professional bodies highlighted the importance of experiencing ‘difficult conversations’ in personal development; conversations, which again, universities cannot generally provide authentically;

However, good a business simulation exercise might be, universities just cannot have the sort of ‘real-world’ conversations that are a feature of business life when things go wrong. (Manager 6)

The students expressed similar sentiments about the need to provide evidence of work-readiness in addition to their university’s framework of employability attributes. For example; verbal rather than written communication skills (cf. Kavanagh & Drennan, 2008) and the need for continuous application and at times sheer stamina. This can be quite different to life at university;

… just because I’m on course for a nice 2.1 degree doesn’t mean that I’m going to be an amazing employee! So yes, that’s definitely one of the challenges I think we [students] face. But, as the [placement] year goes on … you pick up new skills, especially the one-to-one [interactions] with people. If you can’t sit there and have a conversation with a client, or even a fellow employee, then what good are you? (Student 4)

… a lot of students have got this comfort level, a bubble that has been developed around them personally,… It’s quite difficult to all of a sudden work, say, fourteen-hour working days. I think that’s a major, major issue when you’re used to only really working for the last month before your exams. (Student 3)

The SSC managers argued that evidence of work-readiness was essential in allowing them to employ UK graduates without extensive training. SSC manager #4 explained that graduates with relevant work experience were less risky as they ‘know that they are getting into’ and were less likely to leave after ‘just a few months’. Another added;

… there are many students at the moment that are expecting this amazing job with great pay, travelling the world, but I think that [expectation] needs to be brought down. They need to know realistically what they’re going to do on a day-to-day basis, and how their skills can be integrated into the work environment. (Manager 5)

Students also noted the importance of work experience in providing a reality check to their own ideas about work;

… you think, OK, I’m really smart, I know all this about macro- and micro-economics, when realistically not a lot of that comes into play when you’re actually doing the day-to-day stuff. What I mean is that you have this reality check [on a placement]. (Student 1)

By the end of the penultimate meeting (#6 – full-day event) there was a consensus that the term ‘work-based learning’ (WBL) (Raelin, 1997) was useful in encapsulating a wide range of work experiences. However, students need support and mentoring (Trede et al., 2011) to make their individual work experiences relevant to their professional pathway, for example, in the hypothetical ‘coffee shop scenario in Section 2.3. Resonating with the concerns of Hopper (2013) and Howcroft (2017) participants felt that universities do not have the resources to simulate WBL authentically in the classroom and pedagogy should instead focus on intellectual development for longer-term career advancement. There was surprisingly little enthusiasm for technical and generic skills within accounting
degrees. Professional qualifications can provide technical skills, and generic (employability) skills are now seen as expected rather than distinguishing. Overall, participants in the stakeholder group were highly sympathetic with the challenges facing accounting students in the UK as depicted in Figure 3; especially, the substantive amount of debt now being incurred by students.

Towards a new approach

In the final two meetings, various ideas started to emerge about how accounting education might respond to the concerns about entry-level job losses in corporate accounting. The consensus was that universities should facilitate greater engagement with work-based learning (WBL) throughout a degree programme. Extensive discussions took place around how a new approach might be complementary to, but also distinctive from, existing schemes of work-integrated learning (WIL). Many students are already employed in a wide range of alternative work situations that may provide relevant or generic work experience but, a more comprehensive approach to supporting PPI development across all work experience would be helpful. Additional resources would be required to support students, although, participants acknowledged that tutors already face funding constraints and increasing class sizes. The scope of the discussions in the world café exercises was too wide to report here in detail, although we note two items for illustration. First, in terms of opportunities; certain aspects of student support might not, necessarily, require extra tutor resources. For example, participants suggested that greater flexibility in scheduling vacation periods and assessments, along with access to online learning facilities, might help students to undertake part-time work without compromising their academic studies. Comparisons were made with professional exams as some are now available on-demand across the world (e.g. CIMA). Second, in terms of solutions to problems and barriers; how a new approach might be framed to signal a clear reorientation in accounting education? In 2012, the two management consultants had suggested the term Earning-to-Learn. Yet, these students felt that whatever sums might be earnt during their studies, the total amount would likely not have a significant impact on their overall level of study related debt, unless it could draw on the apprenticeship funding regime. Alternatively, Earning-While-Learning might better indicate that the main objective was learning with work experience and while earning some money.

At the time of writing, the UK economy is healthy and the overall graduate market is buoyant (Department for Education, 2019). However, the findings highlight some of the pressures emerging in the fields of work and education that have the potential to impact the prospects for accounting graduates adversely. Finally, the two representatives from the professional bodies pointed out that the offshoring work from the UK provides new opportunities for accounting graduates in those countries receiving work, such as Malaysia and India. They noted CCAB members are well placed to support new accounting students and employers through their established international operations.

Concluding remarks

In response to concerns from practitioners about the relevance of accounting education in the context of significant challenges facing UK graduates, not least, a potential
reduction in entry-level jobs in corporate accounting in large organisations and high study debt, we asked if the changing world of professional work needs a new approach to accounting education? The paper explained how entry-level jobs in large organisations are reducing in higher-income countries, such as the UK, and proposed an alternative approach to accounting education, that emphasises the development of preprofessional identity in order to improve graduate work-readiness for a global market place.

Towards a reframing of accounting education

The first part of the empirical enquiry investigated the consequences of a potential reduction in entry-level roles in corporate accounting in large organisations adopting the SSC model and its associated new work methods and offshoring practices. The visits to SSCs confirmed that UK accounting work is being lost through BPR, automation and offshoring. As conjectured in Figure 2, accounting transformation programmes based on the SSC model are, typically, implemented gradually hence, the extent of job losses and the effects on entry-level roles is not visible externally. It was also argued that fewer entry-level roles makes it harder for graduates in the UK to acquire the in-depth working knowledge, technical skills and professional behaviours that underpin a sustainable accounting career; especially, as competition for advisory roles increases from other professional groups. Practitioners also confirmed the views of our three original informants that accounting graduates might have difficulty competing for mid-level advisory jobs without in-depth knowledge of ‘where the numbers come from’. Figure 3 depicted schematically how a confluence of pressures in both the fields of work and education, not least, substantive student debt in England and Wales, is further increasing the pressure to secure a rewarding and sustainable career.

The enquiry then asked members of the stakeholder working group what support is required to help students develop their own preprofessional identity on graduation? The employer representatives confirmed the ongoing expectation gap between accounting education and employers and stressed the greater importance nowadays of graduates being work-ready to reduce the cost of postgraduate training. The notion of work-readiness was compared and contrasted with employability attributes. It was proposed that work readiness better captures a process of becoming, in which a student develops a preprofessional social identity within a particular work context.

The extent to which tutors can, realistically, provide an authentic simulation of typical workplace behaviours was challenged in the stakeholder group discussions. Participants argued for a new approach to accounting education that encourages graduates to exercise their own agency in order to demonstrate a sense of work-readiness to employers. Figure 1 explained how students might draw on a variety of work experiences in developing their own preprofessional identity. The stakeholder group suggested that tutors could play a more significant role in mentoring students in order to make a broader range of work experiences relevant to their development and that the term ‘work-based learning’ emphasises a more explicit focus on learning from work rather than learning for work. Thus, we call on accounting educators, employers and professional bodies to support students in work-based learning, while also emphasising intellectual development in curricula design and pedagogy.
The chief contribution of the paper is to draw educators’ attention to the implications of the ‘new world of work’ for accounting education and thus, to challenge longstanding assumptions in the literature that it should be incumbent on tutors to integrate workplace skill development into curricula and pedagogy. Given constraints on faculty resources, the ubiquity of university-led employability credentials and the difficulty in providing an authentic simulation of workplace behaviour, we argue that tutors should instead emphasise support for students in making relevant the student’s own work experience to their target career pathway. This should help students to develop their own sense of work-readiness on graduation and allow tutors to concentrate on developing intellectual skills on campus. The paper extends the literature on the formation of preprofessional identity and has updated concerns about graduate under-employment in higher-income countries and the relative value of employability credentials.

**Limitations and further research**

The scope of the enquiry was restricted to corporate accounting activities in large organisations and excluded accounting activities in public practice (e.g. audit and taxation), along with corporate accounting in SMEs. However, we acknowledge that these sectors are significant employers of accounting graduates and that the new world of work and new business intelligence technology will result in new opportunities for accountants to offset some of the entry-level losses. A significant limitation of the fieldwork is the lack of reportable data on actual entry-level job losses. However, by explaining in detail the various ways through which accounting is being transformed in practice, the paper raises awareness of a mostly hidden phenomenon. We hope that future research will be able to quantify the scale of entry-level job losses and the impacts for young people. Finally, we recommend that research is undertaken into the applicability of new working methods to accounting tasks in public practice and to corporate accounting in the SME sector. We suggest that this is now pressing, given recent advancements in the digitisation of accounting (Bhimani & Willcocks, 2014), the adoption of artificial intelligence, robot process automation (Nedelkoska & Quintini, 2018) and accounting self-service systems, along with software programmes such as e-auditing and e-inventory.

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References

Albrecht, W. S., & Sack, R. J. (2000). Accounting education: Charting the course through a Perilous future, accounting education series, 16. American Accounting Association Saratosa.

Albu, N., Calu, D. A., & Guse, G. R. (2016). The role of accounting internships in preparing students’ transition from school to active life. Accounting and Management Information Systems, 15(1), 131–153.

Anderson, P. (2009). Intermediate occupations and the conceptual and empirical limitations of the hourglass economy thesis. Work, Employment and Society, 23(1), 169–180. https://doi.org/10.1177/0950017008099785

Berry, A. (1993). Encouraging group skills in accountancy students: An innovative approach. Accounting Education, 2(3), 169–179. https://doi.org/10.1080/0963928931000074486

Bhimani, A., & Willcocks, L. (2014). Digitisation, ‘Big data’ and the transformation of accounting information. Accounting and Business Research, 44(4), 469–490. https://doi.org/10.1080/00014788.2014.910051

Bishop, D. (2017). Context, agency and professional workplace learning: Trainee accountants in large and small practices. Education + Training, 59(5), 516–533. https://doi.org/10.1108/ET-07-2016-0129

Bolt-Lee, C., & Foster, S. (2003). The core competency framework: A new element in the continuing call for accounting education change in the United States. Accounting Education, 12(1), 33–47. https://doi.org/10.1080/0963928031000074486

Bourner, T., Greener, S., & Rospigliosi, A. (2011). Graduate employability and the propensity to learn in employment: A new vocationalism. Higher Education Review, 43(3), 5–30.

Boyce, G., Narayanan, V., Greer, S., & Blair, B. (2019). Taking the pulse of accounting education reform: Liberal education, sociological perspectives, and exploring ways forward. Accounting Education, 28(3), 274–303. https://doi.org/10.1080/09639284.2019.1586552

Boyce, G., Williams, S., Kelly, A., & Yee, H. (2001). Fostering deep and elaborative learning and generic (soft) skill development: The strategic use of case studies in accounting education. Accounting Education, 10(1), 37–60. https://doi.org/10.1080/096392801211889

Brooks, R., & Youngson, P. (2016). Undergraduate work placements: An analysis of the effects on career progression. Studies in Higher Education, 41(9), 1563–1578. https://doi.org/10.1080/03075079.2014.988702

Brown, J., & Isaacs, D. (2005). The world café, Shaping our futures through conversations that matter. Berrett-Koehler.

Bui, B., & Porter, B. (2010). The expectation-performance gap in accounting education: An exploratory study. Accounting Education, 19(1-2), 23–50. https://doi.org/10.1080/09639280902875556

Burns, J., & Baldvinsdottir, G. (2005). An institutional perspective of accountants’ new roles: The interplay of contradictions and praxis. European Accounting Review, 14(4), 725–757. https://doi.org/10.1080/09638180500194171

Burns, J., & Yazdifar, H. (2001). Tricks or treats? Financial Management, 33–35.

Byrne, S. N., & Pierce, B. (2007). Towards a more comprehensive understanding of the roles of management accountants. European Accounting Review, 16(3), 469–498. https://doi.org/10.1080/09638180701507114

Caballero, C. L., & Walker, A. (2010). Work readiness in graduate recruitment and selection: A review of current assessment methods. Journal of Teaching and Learning for Graduate Employability, 1(1), 13–25. https://doi.org/10.21153/jtlge2010vol1no1art546

Carmona, S. (2013). Accounting curriculum reform? The devil is in the detail. Critical Perspectives on Accounting, 24(2), 113–119. https://doi.org/10.1016/j.cpa.2012.03.004
Chabrak, N., & Craig, R. (2013). Student imaginings, cognitive dissonance and critical thinking. *Critical Perspectives on Accounting, 24*(2), 91–104. https://doi.org/10.1016/j.cpa.2011.07.008

Chartered Institute of Management Accountants (CIMA). (2015). *Finance business partnering: The conversations that count.* CIMA. https://www.cgma.org/Resources/Reports/Documents/CGMA-Business-partnering-report.pdf

Conlon, G., Patrignani, P., & Mantovani, I. (2015). The death of the Saturday job: The decline in earning and learning amongst young people in the UK. UKCES. https://www.gov.uk/government/publications/the-death-of-the-saturday-job-the-decline-in-earning-and-learning-amongst-young-people-in-the-uk

Crawford, L., Helliar, C., & Monk, E. A. (2011). Generic skills in audit education. *Accounting Education, 20*(2), 115–131. https://doi.org/10.1080/09639284.2011.557487

Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research* (3rd ed). Sage publications Inc.

Dearing, R. (1997). *National Committee of enquiry into HE.* HMSO. http://www.dfes.gov.uk/trends/upload/xls/1_2a.xls

Deloitte. (2011). *Shared services Handbook.* Retrieved March 20, 2019, from https://www.gov.uk/government/statistics/graduate-labour-market-statistics-2018

Department for Education (2019) *Graduate labour market statistics 2018.* Department for Education. https://www.gov.uk/government/statistics/graduate-labour-market-statistics-2018

Department of Trade and Industry. (1998). *Our competitive future: Building the knowledge driven economy.* HMSO.

Douglas, S., & Gammie, E. (2019). An investigation into the development of non-technical skills by undergraduate accounting programmes. *Accounting Education, 28*(3), 304–332. https://doi.org/10.1080/09639284.2019.1605532

Evans, E. (2014). The interface between academic education. In R. M. S. Wilson (Ed.), *The Routledge Companion to accounting education* (pp. 632–651). Routledge.

Evans, E., Burritt, R., & Guthrie, J. (2010). Accounting education at a crossroad in 2010. The Institute of Chartered accountants in Australia & centre for accounting, Governance & sustainability. University of South Australia.

Financial Reporting Council (FRC). (2018). *Key Facts and Trends in the accountancy profession.* Financial Reporting Council.

Forsyth, L. (2017). *Is post-school education funding fit for purpose? Call for evidence to Lords Select Committee by Chairman of the Economic Affairs Committee, UK Government.* http://www.parliament.uk/business/committees/committees-a-z/lords-select/economic-affairs-committee/news-parliament-2017/post-school-education-inquiry-launch/

Freudenberg, B., Cameron, C., & Brimble, M. (2011). The importance of self: Developing students’ self Efficacy through work integrated learning. *The International Journal of Learning, 17*(10), 479–496.

Gospel, H., & Sako, M. (2010). The Unbundling of corporate functions: The Evolution of shared services and Outsourcing. *Industrial and Corporate Change, 19*(5), 1367–1396. https://doi.org/10.1093/icc/dtq002

Hammer, M. (1990). Re-engineering work: Don’t automate, obliterate. *Harvard Business Review, July-August,* (online). https://hbr.org/1990/07/reengineering-work-dont-automate-obliterate

Heisig, U. (2009). The Deskilling and upskilling debate. In R. Maclean & D. Wilson (Eds.), *International Handbook of education for the changing world of work* (pp. 1639–1651). Springer.
Helyer, R. (2011). Aligning higher education with the world of work. *Higher Education, Skills and Work-Based Learning, 1*(2), 95–105. https://doi.org/10.1108/20423891111128872

Helyer, R., & Lee, D. (2014). The role of work experience in the future employability of higher education graduates. *Higher Education Quarterly, 68*(3), 348–372. https://doi.org/10.1111/hequ.12055

Herbert, I. P., & Rothwell, A. T. (2004). *Managing your placement*. Palgrave.

Herbert, I. P., & Seal, W. B. (2012). Shared services as a new organisational form: Some implications for management accounting. *The British Accounting Review, 44*(2), 83–97. https://doi.org/10.1016/j.bar.2012.03.006

HESA (Higher Education Statistics Agency). (2018). *HE student enrolments by subject of study and domicile - Academic years 2014/15 to 2017/18*. https://www.hesa.ac.uk/data-and-analysis/students/table-22

Hirsch, F. (1997). *Social Limits to growth*. Routledge and Kegan Paul.

Hooley, T. (2018). Career guidance and the changing world of work: Contesting responsibilising notions of the future. In M. A. Peters, P. Jandrić, & A. J. Means (Eds.), *Education and technological unemployment* (pp. 175–191). Springer.

Hopper, T. (2013). Making accounting degrees fit for a university. *Critical Perspectives on Accounting, 24*(2), 127–135. https://doi.org/10.1016/j.cpa.2012.07.001

Howcroft, D. (2017). Graduates’ vocational skills for the management accountancy profession: Exploring the accounting education expectation-performance gap. *Accounting Education, 26*(5-6), 459–481. https://doi.org/10.1080/09639284.2017.1361846

Howcroft, D., & Richardson, H. (2012). The back office goes global: Exploring connections and contradictions in shared service centres. *Work, Employment and Society, 26*(1), 111–127. https://doi.org/10.1177/0950017011426309

Howieson, B. (2003). Accounting practice in the new millennium: Is accounting education ready to meet the challenge? *The British Accounting Review, 35*(2), 69–103. https://doi.org/10.1016/S0890-8389(03)00004-0

Hutzschenreuter, T., Lewin, A. Y., & Ressler, W. (2011). The growth of white-collar offshoring: Germany and the US from 1980 to 2006. *European Management Journal, 29*(4), 245–259. https://doi.org/10.1016/j.emj.2011.02.002

IFAC (International Federation of Accountants). (2010). *International education standard (3): professional skills and general education*. IFAC.

Jackling, B., & de Lange, P. (2009). Do accounting graduates’ skills meet the expectations of employers? A matter of convergence or divergence. *Accounting Education, 18*(4-5), 369–385. https://doi.org/10.1080/09639280902719341

Jackson, D. (2016). Re-conceptualising graduate employability: The importance of preprofessional identity. *Higher Education Research & Development, 35*(5), 925–939. https://doi.org/10.1080/07294360.2016.1139551

Jackson, D., & Chapman, E. (2012). Non-technical competencies in undergraduate business degree programs: Australian and UK perspectives. *Studies in Higher Education, 37*(5), 541–567. https://doi.org/10.1080/03075079.2010.527935

Jackson, D., Sibson, R., & Riebe, L. (2013). Delivering work-ready business graduates-keeping our promises and evaluating our performance. *Journal of Teaching and Learning for Graduate Employability, 4*(1), 2–22. https://doi.org/10.21153/jtlge2013vol4no1art558

Jameson, J., Strudwick, K., Bond-Taylor, S., & Jones, M. (2012). Academic principles versus employability pressures: A modern power struggle or a creative opportunity? *Teaching in Higher Education, 17*(1), 25–37. https://doi.org/10.1080/13562517.2011.590978

Kakabadse, A., & Kakabadse, N. (2000). Sourcing: New face to Economies of scale and the Emergence of New organisational forms. *Knowledge and Process Management, 7*(2), 107–118. https://doi.org/10.1002/1099-1441(200004/06)7:2<107::AID-KPM91>3.0.CO;2-K

Kavanagh, M. H., & Drennan, L. (2008). What skills and attributes does an accounting graduate need? Evidence from student perceptions and employer expectations. *Accounting and Finance, 48*(2), 279–300. https://doi.org/10.1111/j.1467-629X.2007.00245.x
Kirby, P. (2016). Degrees of debt: Funding and finance for undergraduates in Anglophone countries. The Sutton Trust. http://www.suttontrust.com/researcharchive/degrees-of-debt/

Lambert, S. A., Herbert, I. P., & Rothwell, A. T. (2020). Rethinking the career Anchors inventory framework with insights from a finance transformation field study. The British Accounting Review, 52(2), 100862. https://doi.org/10.1016/j.bar.2019.100862

Lepistö, L., Dobroszek, J., Moilanen, S., & Zarzycka, E. (2018). Being a management accountant in a shared services centre. Journal of Accounting & Organizational Change, 14(4), 492–512. https://doi.org/10.1108/JAOC-03-2017-0022

Lewis, M. (2020). Guide to student loans. Moneysavingexpert.com. https://www.moneysavingexpert.com/students/student-loans-tuition-fees-changes/

Little, B., & Harvey, L. (2006). Learning through work Placements and beyond. Centre for Research and Evaluation.

Merton, R. K. (1987). The focussed interview and focus groups: Continuities and Discontinuities. Public Opinion Quarterly, 51(4), 550–566. https://doi.org/10.1086/269057

Modell, S. (2009). In defence of triangulation: A critical realist approach to mixed methods research in management accounting. Management Accounting Research, 20(3), 208–221. https://doi.org/10.1016/j.mar.2009.04.001

Montano, A., Donoso, J. A., Hassall, T., & Joyce, J. (2001). Vocational skills in the accounting professional profile: The Chartered Institute of management accountants (CIMA) employers’ opinion. Accounting Education, 10(3), 299–313. https://doi.org/10.1080/09639280210122339

NAO (National Audit Office). (2017). The higher education market. National Audit Office. https://www.nao.org.uk/report/the-higher-education-market/

Nedelkoska, L., & Quintini, G. (2018). Automation, skills use and training. OECD social, employment and migration working Papers, No. 202. OECD Publishing.

Nortcliffe, A. (2012, September 18–20). Embedding professional experience and employability into engineering sandwich degrees [Paper presentation]. The International Conference on Innovation, Practice and Research in Engineering Education, Coventry University, UK.

Popper, K. (1959). The Logic of scientific Discovery. Routledge.

QAA (Quality Assurance Agency for Higher Education). (2008). The framework for higher education qualification in England, Wales and Northern Ireland. QAA.

Quattrone, P., & Hopper, T. (2005). A time-space odyssey: Management accounting control systems in two multi-national organisations. Accounting, Organizations and Society, 30(7-8), 735–764. https://doi.org/10.1016/j.aos.2003.10.006

Quinn, B., Cooke, R., & Kris, A. (2000). Shared services: Mining for corporate gold. Pearson Education.

Raelin, J. A. (1997). A model of work-based learning. Organization Science, 8(6), 563–578. https://doi.org/10.1287/orsc.8.6.563

Reid, A., Dahlgren, L. O., Petocz, P., & Abrandt Dahlgren, M. (2008). Identity and engagement for professional formation. Studies in Higher Education, 33(6), 729–742. https://doi.org/10.1080/03075070802457108

Richter, P. C., & Brühl, R. (2017). Shared service center research: A review of the past, present, and future. European Management Journal, 35(1), 26–38. https://doi.org/10.1016/j.emj.2016.08.004

Rodgers, W., Simon, J., & Gabrielson, J. (2016). Combining experiential and conceptual learning in accounting education: A review with implications. Management Learning, 48(2), 187–205. https://doi.org/10.1177/1350507616669479

Roepen, D. (2017). Australian business graduates’ perceptions of non-technical skills within the workplace. Education + Training, 59(5), 457–470.

Rothwell, A. T., Herbert, I. P., & Seal, W. B. (2011). Shared service centres and professional employability. Journal of Vocational Behavior, 79(1), 241–252. https://doi.org/10.1016/j.jvb.2011.01.001

Rothwell, A. T., & Rothwell, F. M. (2016). Employability: An oversight. In M. Tomlinson & L. Holmes (Eds.), Graduate employability in context, Theory research & debate (pp. 41–64). Palgrave Macmillan.
Salijeni, G., Samsonova-Taddei, A., & Turley, S. (2018). Big data and changes in audit technology: Contemplating a research agenda. *Accounting and Business Research, 49*(1), 95–119. https://doi.org/10.1080/00014788.2018.1459458

Samkin, G., & Schneider, A. (2014). The accounting academic. *Meditari Accountancy Research, 22*(1), 2–19. https://doi.org/10.1108/MEDAR-05-2014-0041

Scanlon, L. (2011). Becoming a professional. In L. Scanlon (Ed.), *Becoming a professional: An interdisciplinary analysis of professional learning* (pp. 13–32). Springer.

Seal, W. B., & Herbert, I. P. (2013). Shared service centres and the role of the finance function: Advancing the Iron Cage? *Journal of Organisation and Accounting Change, 9*(2), 188–205. https://doi.org/10.1108/18325911311325951

Sinkovics, R. R., & Alfoldi, E. A. (2012). Progressive focusing and trustworthiness in qualitative research: The enabling role of computer-assisted qualitative data analysis software (CAQDAS). *Management International Review, 52*(6), 817–845. https://doi.org/10.1007/s11575-012-0140-5

Smith, J. A., Morris, J., & Ezzamel, M. (2005). Organisational change, outsourcing and the impact on management accounting. *The British Accounting Review, 37*(4), 415–441. https://doi.org/10.1016/j.bar.2005.07.004

Speklé, V. E., & Kruis. (2007). Sourcing of internal auditing: An empirical study. *Management Accounting Research, 18*(1), 102–124. https://doi.org/10.1016/j.mar.2006.10.001

Tajfel, H., & Turner, J. (1979). An Integrative Theory of intergroup Conflict. In W. G. August & S. Worchel (Eds.), *The social Psychology of intergroup Relations* (pp. 33–47). Brooks/Cole.

Thambar, P. (2012). The transforming finance function: Implications for the education and training of accountants, Chapter 7. In E. Evans, R. Burritt, & J. Guthrie (Eds.), *Emerging pathways for the next generation of accountants, academic Leadership series* (Vol. 3, pp. 65–72). Sydney: Institute of Chartered Accountants in Australia/CAGS.

Tomlinson, M. (2008). ‘The degree is not enough’: Students’ perceptions of the role of higher education credentials for graduate work and employability. *British Journal of Sociology of Education, 29*(1), 49–61. https://doi.org/10.1080/01425690701737457

Tomlinson, M. (2010). Investing in the self: Structure, agency and identity in graduates’ employability. *Education, Knowledge and Economy, 4*(2), 73–88. https://doi.org/10.1080/17496896.2010.499273

Trede, F., Macklin, R., & Bridges, D. (2011). Professional identity development: A review of the higher education literature. *Studies in Higher Education, 36*(3), 365–384. https://doi.org/10.1080/03075079.2010.521237

UCAS (Universities Clearing and Admission System). (2018). 2018 end of Cycle report. https://www.ucas.com/data-and-analysis/undergraduate-statistics-and-reports/ucas-undergraduate-end-cycle-reports/2018-end-cycle-report

Ulbrich, F. (2006). Improving shared service implementation: Adopting lessons from the BPR movement. *Business Process Management Journal, 12*(2), 191–205. https://doi.org/10.1108/14637150610657530

Watty, K. (2014). Generic skills within the accounting curriculum. In R. M. S. Wilson (Ed.), *The Routledge Companion to accounting education* (pp. 276–293). Routledge.

Webb, J., & Chaffer, C. (2016). The expectation performance Gap in accounting education: A review of generic skills development in UK accounting degrees. *Accounting Education, 25*(4), 349–367. https://doi.org/10.1080/09639284.2016.1191274

Wells, P., Gerbic, P., Kranenburg, I., & Bygrave, J. (2009). Professional skills and capabilities of accounting graduates: The New Zealand expectation Gap? *Accounting Education, 18*(4-5), 403–420. https://doi.org/10.1080/09639280902719390

Wilcock, L. P., & Lacity, M. (2016). *Service automation: Robots and the future of work*. Steve Brookes Publishing.

Youngdahl, W., & Ramaswamy, K. (2008). Offshoring knowledge and service work: A conceptual model and research agenda. *Journal of Operations Management, 26*(2), 212–221. https://doi.org/10.1016/j.jom.2007.02.007