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ABSTRACT

While higher education institutes attempt to adapt their curricula to cope with national employability strategies, there remain some significant variations between what employers want and the attributes possessed by new graduates. Using a systematic review of literature and focused scanning of the job market, the authors aimed to contribute to the debate by mapping and contrasting the rankings of graduate attributes among academic and practitioner communities. The study focuses on 2 sectors from the United Kingdom.

Introduction

Graduate education and employability are the main pillars of social and economic development for any country. They are characterized by a set of achievements, skills, and personal attributes that make graduates more likely to gain employment and be successful in their chosen occupations (Holmes, 2013; Hurrell, Scholarios, & Thompson, 2012; Yorke, 2006). However, most universities are operating in an extremely competitive and dynamic job market while developing graduate programs that evolve with the needs of the market. This is in addition to meeting pressures from policymakers to produce job-ready graduates to instantly join the workforce. In such a context, enriching the academic programs to deliver the most up-to-date and in-demand graduate attributes and skills is vital, yet extremely challenging. Reducing the mismatches between expectations regarding graduate attributes among the academic and practitioner communities has become a major target for the concerned stakeholders combined with the increased effort to embed more employability skills within university curricular. However, in a recent study by Moore and Morton (2017), it is suggested that such disparity is not necessarily the source of the problem. The study comes up with some interesting findings that with a change of perspective, universities should focus on teaching students to learn how to learn, rather than focus on developing job-ready skills. To this end, we aimed to push the debate further in this direction by capturing a wider set of graduate attributes using different types of evidences. It is our belief that if such suggestions are true, then this should significantly alter the debate on employability skills. We used a combined method to map the variations in rankings of skills based on academic and practitioner communities, focusing on accounting and finance (A&F) and information and communication technology (ICT) as exemplar fields based in the United Kingdom.

We start by briefly examining the present context of employability and skills in the United Kingdom. This is followed by an overview of the methodology used to review the normative literature and analyze the attributes demanded by the UK employment market. Next, a summary of skills currently in demand by UK employers across the fields of A&F and ICT is presented. A discussion is then offered delineating the main trends, issues, and gaps in graduate attributes, across literature and practice. The article concludes with recommendations to research and practice with future directions shifting the focus of the on-going debate to avoid adding more of the same.

Background: Employability skills gaps in UK context

Recent discussions in the United Kingdom have been focused on policies supporting the diversification of further education to meet the continuously evolving needs of the industry. Over the past two decades, graduate employability has consistently ranked highly

on the UK government's agenda, following the Dearing report of higher education in 1997 (Dearing, 1997; Gbadamosi, Evans, Richardson, & Ridolfo, 2015). In support of this move, public agencies such as the department for education and education endowment fund have recently promoted research into character education and development of professional skills for young people in the United Kingdom. Private organizations, nongovernmental organizations, and charitable organizations have also joined the debate on skills by engaging with schools and universities to initiate volunteering and entrepreneurial programs. Nonetheless, while employers and academics alike have continued to engage in the debate of employability and proposed self-development portfolios of attributes and skills over the years, employability has neither developed as a concept nor stimulated a program of systematic research that examines its impact (Hallier, 2009). In 2014, the UK Commission for Employment and Skills published a report, which sets out a comprehensive review of the pressing issues facing UK's employment and skills system (UK Commission for Employment and Skills, 2014). Despite evident economic growth, the report questions the ability of employers and employees to exploit and adapt their competencies in a rapidly evolving market environment. It also highlights skills shortages, when businesses cannot recruit people they need. Such findings are confirmed by the Organization for Economic Cooperation and Development, stating that UK graduates demonstrated low levels of literacy and numeracy skills that are significantly behind countries such as Japan and Finland (Organization for Economic Cooperation and Development, 2014). Elsewhere, other studies have also confirmed similar gaps between graduate education and usable skills demanded in the labor markets in the West (Humburg, de Grip, & Van der Velden, 2015; Scholarios et al., 2008) and in large economies such as China (Pang, Chua, & Chu, 2008; Ren, Zhu, & Warner, 2011) and South Africa (Horwitz, 2013). A survey conducted by YouGov of 635 employers (419 directly responsible for recruiting graduates) shows that more than half of the employers are reporting that graduates are not ready for work when they join organizations and lack vital skills such as team working, punctuality, and ability to cope under pressure (Paton, 2013). Such concerns are further corroborated by a British Chambers of Commerce survey of 3,000 firms, in which more than half of employers surveyed thought graduates were not ready for employment, lacking basic skills such as communication (BBC, 2014).

Several authors (Gibbs, Steel, & Kuiper, 2011; McCracken, Currie, & Harrison, 2015; Yorke, 2006) have outlined numerous interpersonal attributes and applied skills that should be embedded in higher education curricula. Most of these studies agree on the existence of the gap between graduate skills and job requisites and recommend better understanding of profession-based skills. There are many studies proposing comprehensive lists of employability skills; however, they do not match the employers' perspectives, who may be interested in less comprehensive lists yet more relevant and effective to their professions. This is exasperated by the unavailability of definitive descriptions of transferable skills that employers expect out of graduates (Cox, Al Daoud, & Rudd, 2013; Gibbs et al., 2011; Gray, 2010; Hinchliffe & Jollyly, 2011). Lloyd and Payne (2009) argued that "unless a skill has a clear link to technical competence and knowledge, there is real danger that as a concept it will become ever more meaningless" (p. 631). These issues can only be addressed if academic institutions introduce, in collaboration with practitioners, a mandate whereby programs covering employability skills both technical and interpersonal are embedded in the taught curriculums. Ironically, some scholars believe that the distinction between employability and academic skills is unclear, because proficiency in employability skills can only nurture academic development (Jackson, 2014). On the other hand, some researchers argue that there is an imbalance between the conceptual and practical aspects of evaluating graduate skills (Clarke, 2017).

It is evident from the academic literature and relevant gray literature that there is a lack of consensus about the actual list and the approach to take when embedding employability as part of higher education institution curricula. Given the growing concern continuing to approach the mismatch problem, by adding more skills in the higher education institutions curricular, is futile (Frankham, 2017) and potentially depriving universities from their main role (Moore & Morton, 2017), the authors highlights the futility of the current pattern in the literature while highlighting the urgency of bridging this prevailing gap (i.e., the mismatch between the redundant comprehensiveness of higher education providers and the more pragmatic perceptions of industries). To this end, we conducted a systematic literature review, representing higher education graduates lists, and a profession-based scanning, representing industries and maps the two

perspectives to identify the potential causes of such mismatched priorities. This should allow us understand more about the causes of such mismatch and how to move the debate forward.

The present study

The present research methodology is a combination of systematic literature review and focused scanning of recent adverts with A&F and ICT fields. Outcomes from both are then compared and contrasted against each other to assess the degree of mapping and match between the different sources of information. The following discussion provides detailed description of the two submethodologies.

Systematic literature review

To identify the graduate attributes and skills in the fields of A&F and ICT as discussed in normative studies, a systematic literature review was undertaken using the Scopus database (see Figure 1). The search was complemented with an additional focused search of relevant human resources management journals that were ranked 3 and 4 stars in the Association of Business Schools journal ranking list.

Core graduate attributes and skills: Literature perspective (Academia)

The systematic literature review revealed the following core graduate attributes (see Table 1), which also ranks them based on their frequency of citation. Communication, teamwork, problem solving, and creativity were the top four interpersonal attributes, while the ability to use technology is the top-ranked applied skill.

What can be clearly deduced from the review are preferences for graduate attributes such as communication are consistent across both developed and developing economies (Jackson, 2014; James, Warhurst, Tholen, & Commander, 2013; Lloyd & Payne, 2009; Moy, 2006). Azevedo, Apfelthaler, and Hurst (2012) found communication consistently identified as one of the top most ranked competencies in the employment market. Nickson, Warhurst, Commander, Hurrell, and Cullen (2012) and Grugulis and Vincent (2009) found that interpersonal attributes or soft skills are the strongest influencers, with academic reputation ranking the lowest, in terms of impact on employability. Researchers such as Gibbs et al. (2011) and Gray (2010) found that employers naturally perceive that it is not their responsibility to train graduates in basic soft skills such as communication, and the universities are accountable for doing so.
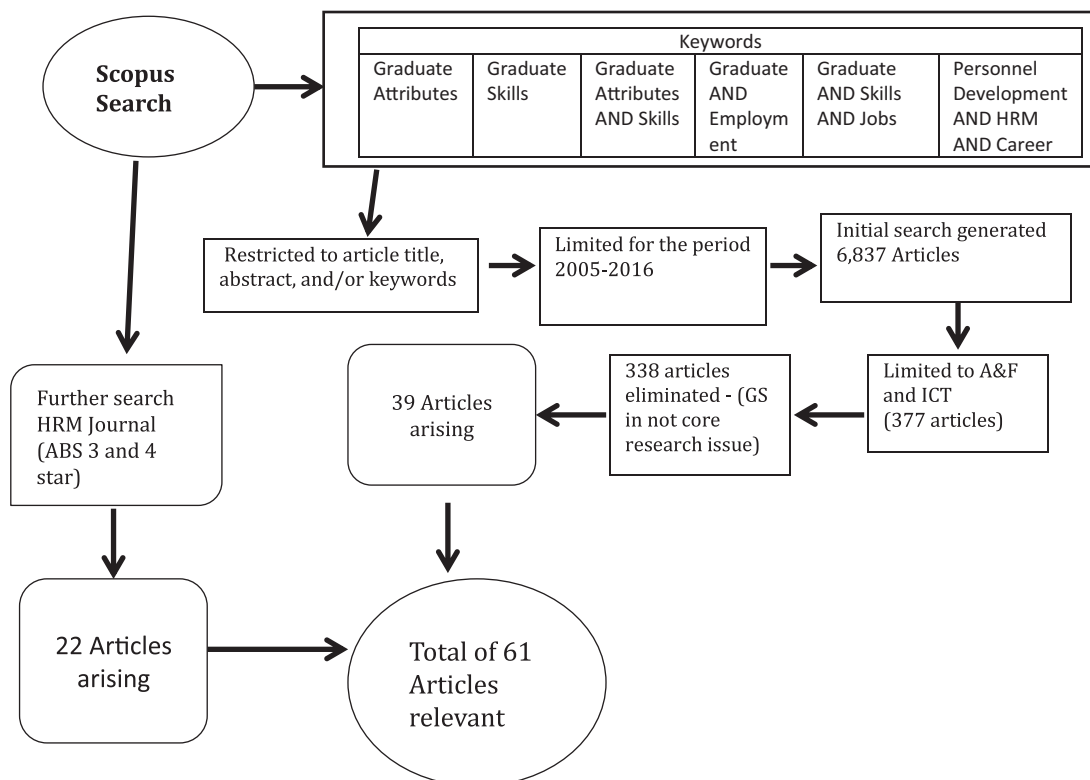

Figure 1. Research methodology.

Table 1. Core graduate attributes.

Graduate Skills	Frequency	Sources
Communication	24	Gray (2010); Koppi et al. (2009); Cox et al. (2013); Nicolescu and Paunn (2009); Jackson (2014); Azevedo et al. (2012); Ren et al. (2011); Moy (2006)
Teamwork	18	Koppi et al. (2009); Cox et al. (2013); Nicolescu and Paunn (2009); Jackson (2014); Azevedo et al. (2012)
Problem solving	11	Koppi et al. (2009); Cox et al. (2013); Nicolescu and Paunn (2009); Jackson (2014)
Technological skills	11	Cox et al. (2013); Jackson (2014); Horwitz (2013)
Creativity	10	
Interpersonal	8	
Leadership	7	Azevedo et al. (2012)
Self-management	6	Cox et al. (2013); Jackson (2014); Azevedo et al. (2012)
Flexibility/adaptability	6	Nicolescu and Paunn (2009); Scholarios et al. (2008)
Critical thinking	5	Jackson (2014); Azevedo et al. (2012);
Time management	5	Azevedo et al. (2012)
Willingness to learn	5	Nicolescu and Paunn (2009)
Planning and organizing	5	Koppi et al. (2009);
Initiative	4	Jackson (2014)
Negotiation	3	
Pregraduation work experience	2	
Working under pressure	2	
Self-confidence	2	
Personality	2	
Independent working	2	
Motivation	2	

With most companies adopting agile methodologies, employers hugely favor team players (Koppi et al., 2009). As a result, organizations will only hire candidates who can contribute to team success (Daud, Abidin, Mazuin Sapuan, & Rajadurai, 2011), graduates need to be trained in group dynamics and the importance of maintaining a balance when working in teams, while also individually contributing to maximize the team output (Papadopoulos & Armatas, 2013). Students can be trained in leadership competence by designing and evaluating learning activities that demand high levels of proficiency from them (Azevedo et al., 2012; Lucio, Skule, Kruse, & Trappmann, 2007).

In-demand graduate skills in the United Kingdom: A review of job sites

For the second part of the data collection process, we undertook a scanning of currently demanded skills for A&F and ICT jobs, as advertised by leading organizations in the United Kingdom. The findings corroborated the core attributes and skills synthesized from the literature while revealing new ones. Eustice (2010) reported views of several senior managers from leading firms in the United Kingdom, including PWC, KPMG, Marks and Spencer, and Procter & Gamble, about graduate attributes and skills. Among these, strong leadership qualities and initiative, tackling complex information and effectively communicating it to others, the ability to deal with different personalities at work and experience of dealing with difficult people, team working, efficient management of time,

and level of productivity when working under pressure are cited as core interpersonal attributes that companies look for in graduates.

In the field of ICT, both large and small companies expect their graduate-level employees to have the following traits and skills alongside technical proficiencies (IBM, 2015; Microsoft, 2015; Marks & Scholarios, 2008):

- Coping with changing demands and stress, flexibility, record of successfully completed projects with competing deadlines
- Communication in presenting information clearly, precisely, and succinctly; adapt ways in communicating with different audiences, and listening to others
- Client focus in seeing a situation from a client's viewpoint
- Creative problem solving in using ingenuity, supported by logical methods and analysis, to propose solutions and innovative ideas
- Drive in proactively learning new skills
- Teamwork to achieve shared goals
- Passion for the organization in keeping up to date with the company's most recent achievements; the latest trends in the industry, negotiation and conflict management; and taking ownership for tasks and decisions; implementing decisions with speed, and rectifying committed mistakes along the way

In a study by Right Management (Career Experts), a survey of 250 managers and 100 human resources

leaders across UK and Irish firms in 2014 found that 62% of managers thought leadership attributes are critical to growth alongside resilience and flexibility (Right Management, 2014). According to 91% of human resources managers, by 2019, employees will be recruited on their capability to accept and deal with uncertainty and change. Also, surfacing from the survey was the fact that resilience is quickly becoming a critical employee attribute in today's job market (Right Management, 2014). Their flux report (see figure 2) identified that it would be important for candidates to demonstrate leadership and management and interpersonal attributes such as innovation and creativity and resilience, as well as technical or specialist skills over the next five years in the job market (Right Management, 2014).

Core graduate attributes and skills: Market perspective (practitioners)

To consolidate the secondary reports discussed in the previous section, the methodology involved a third and final data collection process involving a search for current graduate attributes and skills being sought by A&F and ICT firms in the United Kingdom using Reed.co.uk, a recruitment consultancy website (Reed, 2015). A filter for graduate jobs was applied, and the job engine was searched for vacancies across A&F and ICT fields. This jobsite allows searching for jobs posted by employers and recruiting agencies in the last two weeks. From the search, 375 A&F-related positions and 286 ICT-related positions were retrieved. Around two thirds of advertised positions were for entry-level graduate vacancies.

The 375 accounting positions were individually scanned to identify positions advertised for entry-level graduates. 260 positions were found to be suitable for graduates. Some of these vacancies were for positions such as graduate finance and accounting, accounting intern, assistant accountant, assistant corporate

accountant, bookkeeper, assistant financial accountant, assistant management accountant, trainee payroll officer, data analyst/reporting analyst, tax accounts assistant, financial analyst, and others. Another search was carried out in a similar manner for ICT-related vacancies. Only 286 positions came up, which were scanned further and 153 vacancies of the 286 were advertised for graduate-level roles (see Table 2). The roles advertised were that of ICT/IT technician, ICT/computer science teacher, business and ICT teaching assistant, IT support/office assistant, technical support consultant, IT analyst, graduate-trainee consultant in IT, graduate IT consultant, and others.

Some of the most common attributes identified by employers in the accounting firms are excellent customer service, organization skills, ability to learn fast with an appetite to learn new skills quickly, outstanding communication, self-motivation, proactivity and show of initiative with the ability to self-manage, ability to solve problems quickly and ability to resolve tricky customer queries, good humor, enthusiasm, being an upbeat team player, hardworking attitude, a career-driven attitude, being financially motivated, a competitive nature, attention to detail, ability to spot areas of improvement, ability to work under pressure to tight deadlines while maintaining high levels of accuracy, and confidence. In relation to more applied skills, working knowledge of basic Microsoft Office packages, Google apps, data analytics skills, and project management were identified by companies as important.

Similarly, a search for ICT positions showed the following attributes in common: excellent communication and presentation skills, high standards of personal presentation, relevant work experience, flexibility, a proactive approach, self-motivation, can-do attitude, strong team-working ability, record of balancing priorities and working to strict timescales, good behavior management, mature, hardworking, ability to work independently, willingness to learn new skills and pass on knowledge, adaptability, ability to be accurate and methodical, approachable personality, and ability to prioritize and manage time. In terms of applied skills, experience of Microsoft

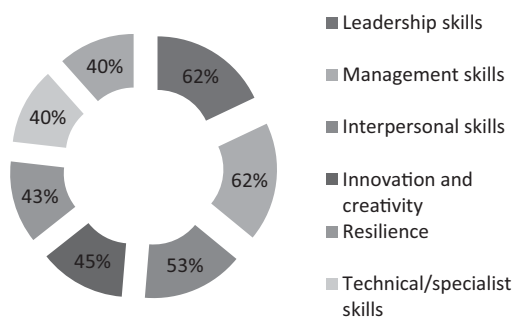Figure 2. In-demand graduate attributes distribution. (Source: Flux Report; Right Management, 2014).

Table 2. Job types for A&F and ICT Positions.

		Permanent	Temporary	Full-time	Part-time
A&F					
Total advertised 375	Entry level 260	79	32	121	28
ICT					
Total Advertised 286	Entry level 153	32	26	88	7

products and various hardware and software skills were mentioned as important based on the different ICT jobs advertised.

Some of the most commonly mentioned graduate attributes and skills are recorded for how frequently they are demanded across different A&F and ICT job positions. These numbers have been captured across most commonly advertised job positions in the A&F (entry-level accountant, accounting and finance graduate, accounts assistant, accounting intern, financial assistant) and ICT fields (ICT technician, ICT/computer science teacher, business and ICT teaching assistant, IT Technician, IT office assistant, technical support consultant, IT analyst, graduate IT consultant). Table 3 provides the ranking of the graduate attributes based on the job market. The ranking uses A&F skills as a base while the ICT skills follow it.

Discussion

In this section, we compare the different rankings of graduate attributes between the two lines of investigations and within both A&F and ICT domains in the United Kingdom. Mapping these attributes presented a very clear disparity between academic literature and advertised jobs as portrayed in Table 4. For example, skills such as communication, leadership, and time management are included in both columns. However, there are some surprising outcomes such as the creativity and personal skills, which scored high in the literature list, which are not mentioned in the job market. Academics tend to be more generic in defining creativity—or other terms for that matter; however, recruiters would require some specific skills toward specific jobs. Creativity is not a one-size-fits-all proposition for all employees and has to be tailored

based on employees' aptitude and capacity to be creative. Moreover, smaller companies give more importance to problem-solving skills, whereas larger companies are less interested in it. On the other hand, we found that academic knowledge is mentioned in the practitioners' perspective as an attribute that is expected in graduates, but does not appear in the academic literature. This may be due to the fact that this is a given (i.e., university graduates should have academic knowledge). Overall, Table 4 shows a clear mismatch of perspectives between academia and practitioners. However, the core objectives remain the similar.

Comparison between A&F and ICT attributes

Before mapping the rankings of the common skills between literature and practitioners, we looked at how in-demand skills from both A&F and ICT compare with each other. This will allow us to assess any arising variations between the two fields as well as validating the use of job adverts as indicators for the market needs and its necessary skills. At first glance of Table 3, it is possible to assume that the skills ranking is the same for both fields. However, and as can be viewed in Figure 3, there are less mismatches in the ranking in the following attributes: teamwork, time management, problem solving, and academic knowledge. We find that Team work scores higher in ICT compared with A&F, this is quite reasonable as

Table 3. Graduate attributes in-demand across A&F Jobs.

	A&F		ICT	
In-demand skills	n	%	n	%
Communication	117	23	127	19
Teamwork	83	17	149	22
Planning and organizing	72	14	102	15
Time management	56	11	28	4
Flexibility/adaptability	51	10	75	11
Self-motivation	24	5	28	4
Problem solving	23	5	58	9
Leadership	23	5	55	8
Academic knowledge	18	4	2	0
Conflict management	16	3	13	2
Working under pressure	9	2	16	2
Negotiation	7	1	5	1
Drive	2	0	5	1
Commercial awareness	1	0	2	0
Client focus	1	0	16	2

Table 4. Graduate attributes: Literature versus practice.

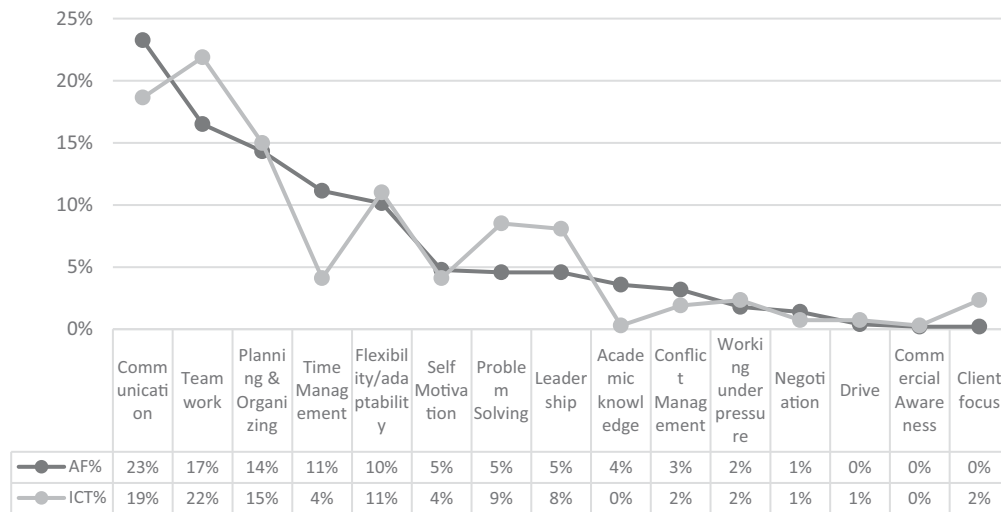|	Graduate Skills	Literature	Markets
1.	Communication	Yes	Yes
2.	Teamwork	Yes	Yes
3.	Problem solving	Yes	Yes
4.	Technological skills	Yes	No
5.	Creativity	Yes	No
6.	Interpersonal	Yes	No
7.	Leadership	Yes	Yes
8.	Self-management	Yes	Yes
9.	Flexibility/adaptability	Yes	Yes
10.	Critical thinking	Yes	No
11.	Time management	Yes	Yes
12.	Willingness to learn	Yes	No
13.	Planning and Organizing	Yes	Yes
14.	Initiative	Yes	No
15.	Negotiation	Yes	Yes
16.	Pregraduation work experience	Yes	No
17.	Working under pressure	Yes	Yes
18.	Self-confidence	Yes	No
19.	Personality	Yes	No
20.	Independent working	Yes	No
21.	Motivation	Yes	Yes
22.	Commercial awareness	No	Yes
23.	Planning and organizing	No	Yes
24.	Conflict management	No	Yes
25.	Client focus	No	Yes
26.	Academic knowledge	No	Yes

Figure 3. Comparison of graduate attributes ranking between A&F and ICT.

most ICT jobs require working in groups for many development projects. Contrary to that, time management scores lower in ICT than A&F. Although meeting deadlines is important for ICT projects, it represents a legal component for financial systems. Problem solving is a usually a major components of ICT jobs and would naturally score higher than in A&F. Finally, we find that academic knowledge is more important in A&F than ICT due to the specificity of the type of jobs and the legal requirements in that field. ICT jobs rely more on the acquired skills of the employee rather than just the basic rules. Despite several discrepancies in priorities between A&F and ICT fields based on the job market, we find that mostly these are expected ones, while both fields seem to follow a general trend of prioritization as far as graduate attribute ranking is concerned. This shows that graduate attributes priorities may differ from organization to the other depending on the discipline, size, location, and target customers. Therefore, higher education institutions will fail if they wish to provide specific skills for each employer, while it would be more effective if they focus on more generic skills of adaptability in the place of work.

Comparison between literature and adverts attributes

Out of 21 literature-based attributes and 16 market based attributes, there were only 11 matched (i.e., included as ranked attributes in both perspectives; see Table 5). There are evident mismatches between the rankings of practice and literature in the 11 attributes as presented in Figure 4. It can also be deduced from the Figure 4 that, while there is a general agreement

Table 5. Comparison of graduate skills ranking in literature versus AF versus ICT.

Skills	Literature		A&F		ICT	
	n	%	n	%	n	%
Communication	24	27	117	25	127	20
Teamwork	18	20	83	18	149	23
Problem solving	11	12	23	5	58	9
Leadership	7	8	23	5	55	8
Self-management	6	7	24	5	28	4
Flexibility/adaptability	6	7	51	11	75	12
Time management	5	6	56	12	28	4
Planning and organizing	5	6	72	15	102	16
Negotiation	3	3	7	1	5	1
Working under pressure	2	2	9	2	16	2
Motivation	2	2	2	0	5	1

about some of the attributes such as communication and team work, there other attributes such as adaptability and planning and organization that score high in the job market but do not score as high in the literature. This reflects Hernández-March, Martín del Peso, and Leguey's (2009) suggestion that organizations are particular about a graduate's ability to effectively manage their time at tasks and work under pressure. Employers expect candidates to be well organized and efficient in carrying out the allocated tasks responsibly as well as being adaptable to deal with different situations, with less emphasis on critical thinking and problem solving (Nicolescu & Paunun, 2009).

Despite the clear discrepancy in the rankings among the attributes, one can infer from the previous discussions that there is a general agreement between academia and practice of the importance of communication and teamwork. Practitioners seem to focus more on agility and being able to self-organize and
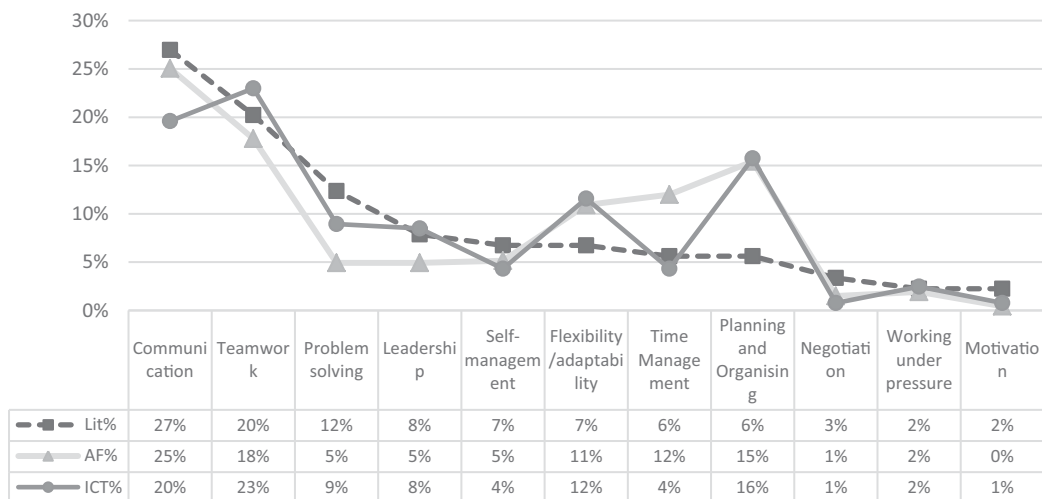
Figure 4. Comparison of graduate attributes ranking between literature, A&F and ICT.

	Communication	Teamwork	Problem solving	Leadership	Self-management	Flexibility /adaptability	Time Management	Planning and Organising	Negotiation	Working under pressure	Motivation
Lit%	27%	20%	12%	8%	7%	7%	6%	6%	3%	2%	2%
AF%	25%	18%	5%	5%	5%	11%	12%	15%	1%	2%	0%
ICT%	20%	23%	9%	8%	4%	12%	4%	16%	1%	2%	1%

meet tight deadlines for specific issues. On the other hand, academics seem to focus more on finding the right solution and best fit to the problem.

Conclusions

This study portrays clear evidences of a mismatch of priorities between academic literature and actual practitioners in terms of graduate attributes. However, we suggest research effort ought to focus on making use of the variations rather than eliminating them. Such mismatches exist because of the nature of the suppliers (universities) and demand (employers). The focus should be on how employability is instilled rather than what skills are taught. Furthermore, the variation shown here between A&F and ICT is another evidence of how different sectors are looking for different skills. This confirms recent reports regarding the inconsistency of the demand leading to inability of universities to satisfy "all" employers following the current employability curriculum. We conclude by recommending that universities should continue to embed employability attributes within their curriculum. However, the focus should be shifted from policymakers pushing universities to meet the demand— by creating job-ready graduates using means such as the Teaching Excellence Framework—to teaching students how to pick new skills as they go.

Funding

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