T-shaped and Transferable Skills. How can University Graduates' Employability be Strengthened?

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Abstract

Transferable skills, employability skills, work-integrated learning and T-shaped skills are all concepts which are discussed as skills and competences needed by university graduates in order to secure a job after graduation. There is discussion among decision-makers on how university programmes, especially at Master's level, handle the increasing pressure of ensuring that their graduates obtain jobs fast. Many argue that the job market is increasingly demanding graduates who can adapt to change and act as innovators themselves. Core skills within a university discipline are important, but it seems increasingly important to be able to cut across disciplines and sectors as a professional. Similarly, the above-mentioned skills are all skills that are required in problem-solving. Thus the paper also discusses problem-based learning as a way to obtain skills, especially problem-solving skills.

This paper has two aims: to unfold the different practices that can be used to equip graduates with the skills needed, and to give an example of how this can be done in a specific case.

Keywords: transferable skills, work-integrated learning, T-shaped skills, employability, problem-based learning

Introduction

The first part of the paper includes a more general analysis of graduate skills needed, while the second part presents a case study. The two parts of the paper will then be discussed together, where the case study will serve as an example of transferable skills, work-integrated learning, T-shaped skills and employability skills all combined in the problem-solving capabilities of future graduates. All of these terms are widely discussed in literature, and they do not have one agreed definition. However, the terms are useful when discussing what students need in order to obtain jobs after graduation. Furthermore, the terms will be analysed in the context of problem-based learning, which is a teaching method and philosophy used at the author's university (Kolmos et al., 2004).

This paper uses empirical data from the author's own teaching experience of working with external partners on a work-integrated learning process, where students collaborate in teams and solve tasks set by external stakeholders, being two NGOs, a start-up company and a private company. The case study examines how external stakeholders working with university students for a longer period of time (6–8 weeks) perceive collaboration with students. Through interviews, it is discussed whether students have the skills necessary to enter the job market from employers' point of view, and whether and why students see an advantage of working with external partners as part of the ninth university semester. The argument proposed here is that collaboration between students and external partners will emphasize to students that they possess transferable skills from which companies, organizations and state institutions can benefit, since students are surprisingly unaware of their own skills and competences during this last year of their university studies (Cryer, 1998; Andersson and Balslev, 2018, 2022). The research question is: Can including collaboration in university curricula contribute to graduate candidates' success in acquiring a job? The case in this paper is from a ninth semester programme within humanities and social science.

Methodology

The main empirical data for this paper were gathered through qualitative interviews with four external partners—two NGOs, a start-up company and a private company—working with ninth semester students for 6–8 weeks. The external partners were introduced to the methods we used in our teaching in this specific semester, and it was the partners that formulated a task on which students should work in groups or teams (Andersson and Balslev, 2022).

In addition to the external partners, qualitative data are gathered from interviews with five student groups. The students came from different Master's programmes: Tourism studies and Global Refugee studies. The interviews were conducted in March 2020. The ninth semester took place in the autumn of 2019, before COVID-19 and so prior to social distancing and lockdowns. Students formed part of the partners' organization/company by solving a task for the company, but at the same time distanced themselves through the project work, where they could employ their skills as university students within a specific field. Students thus used their core competences from their own university programme and at the same time benefited from being part of a diverse group of students with different competences from different Master's programmes. Thus they were both confident in their core competences and trained in an interdisciplinary environment as part of their university studies, which developed skills among the group members.

Employability: Skills and Competences

There is an increasing interest in Master's candidates' employability skills from universities, politicians, and companies and organizations hiring university candidates (Helyer and Lee, 2012; Tomlinson, 2012; Kinash et al., 2016). Much discussion has been directed to areas such as whether universities educate researchers or practitioners (Tomlinson, 2012). The common practice is to do a little of both, but the importance of graduates' employability seems

to play an increasingly important role in university programmes at both Bachelor's and Master's level.

As stated by Cryer (1998, p. 210), students often have difficulty identifying their own skills when they are asked to do so. Alluding to the role of universities in educating students, not all students will continue as researchers (Tomlinson, 2012). Cryer (1998) framed 'transferable skills' as the main challenge for universities to offer, meaning skills that students can transfer into their working life. The question is, what is the best way to do this? One argument in this paper is that collaboration with external partners is a way to make students obtain transferable skills, which will lead to employment after graduation. Other authors underscore the importance of examining employability. We have to examine the factors and challenges that affect employability (Helyer and Lee, 2014, p. 350).

Students must improve and challenge their practices in collaboration with external partners. One method which can be used is work-integrated learning (WIL), which forces students to work with real-life problems and collaborate with stakeholders outside university. Since this type of learning is often not included in the university curriculum, best practice processes and experiences are needed to offer insight into what transferable skills, WIL, T-shaped skills and employability mean for students' chance of starting a career just after graduating from university.

Through collaboration with external partners, students gain different insights. In Cryer's (1998, p. 209) words, they must plan, act, observe and reflect, and then plan, act, observe and reflect again. This way engagement and reflection will be embedded practices for students. Cryer's description of the process above is similar to Kolb's experiential learning circle (Kolb, 1984/2014), which was inspired by Dewey (1938/2015). Kolb analyses the relationship between theory and practice when university students are working with external stakeholders, where they are required to rethink their skills and capabilities in

new contexts (Andersson and Balslev, 2018). In line with this, Helyer and Lee (2014) argue that:

> [..] it is not sufficient for students to just 'experience' the workplace, passively, they need to actively engage in order to learn. 'Learning is the product of students' efforts to interpret, and translate what they experience in order to make meaning of it' (Cooper et al., 2010, p. 62). This requires honed skills of reflection, in order to reflect effectively on what they have *learned* from the experience, acknowledge and build upon this learning (2014, p. 353).

This quote links to the experiential learning cycle (Kolb, 2014) and the process outlined by Cryer (1998) above, and leads to a more thorough analysis of the core terms used in this paper: transferable skills, WIL, T-shaped skills and employability skills.

Employers want graduates to be resilient and adaptable and to possess the skills, attitudes and belief necessary to win a job, succeed in that role, and move on to an even more fulfilling role in the future (Helyer and Lee, 2012, 2014). This is why it is important to study employability, since "Learning and doing cannot be separated and therefore to use knowledge to its fullest potential it must be implemented, performed and enhanced as part of a synergy" (Helyer, 2010, p. 21).

"Employability is an extremely complex, and somewhat vague, concept that is both difficult to articulate and define. However, by synthesizing the available literature, it is possible to identify key 'transferable' soft skills and competences integral to graduate employability" (Andrews and Higson, 2008, p. 413). Andrews and Higson identified the following skills, which are important aspects of graduate employability and represent transferable skills and competences: professionalism; reliability; the ability to cope with uncertainty; the ability to work under pressure; the ability to plan and think

strategically; the capability to communicate and interact with others, either in teams or through networking; good written and verbal communication skills; information and communication technology skills (ICT); creativity and self-confidence; good self-management and time management skills; and a willingness to learn and accept responsibility (Andrews and Higson, 2008, p. 413). Ideally, universities need to make sure that candidates have these skills (or most of them) when they graduate. In the ninth semester courses, which is the case for this paper, instructors work actively to include most of the transferable skills and competences described above (Andersson and Balslev, 2018, 2022). The following examples from interviews with stakeholders and students will develop these arguments more.

Bridgstock (2009) contends that employability is subject to broader definitions: "The capacities of reflectiveness and lifelong learning underpin the three broad categories of competencies necessary for 'a successful life and well-functioning society' (cf. Rychen and Salginak, 2005, p. 4): 'use of tools', 'acting autonomously' and 'interacting in heterogeneous groups'" (Bridgstock, 2009, p. 34). All of these are in use when students collaborate with external partners. The stakeholders who participated in interviews, which form the data for this paper, all emphasized the importance of these three categories when talking about skills and competences among future employees. The ability to interact in heterogeneous groups is also core to T-shaped skills, which will be discussed later in this paper. These skills must be combined with core understanding of a discipline to build the capacities necessary for employability: "'information literacy'; 'research and enquiry'; 'personal and intellectual autonomy'; 'ethical, social and professional understanding'; and 'communication'" (Bridgstock, 2009, p. 34).

Development of these skills and competences among students can be added to curricula in a formal way to ensure that students leave university with the necessary knowledge of the job market. Thus universities must ensure that students leave university with transferable skills, based on both deep academic knowledge and some form of career management skills which can

be utilized once they enter the job market. Collaborating with external stakeholders as part of university curricula in a WIL process can contribute to providing students with employability skills.

T-shaped Skills

T-shaped skills (Martin and Rees, 2019) are another way of discussing what is needed in order to do well in the job market, especially a job market where we see constant changes and which requires innovation skills and knowledge in the use of technologies. Scholars working within this field describe a "T-shaped professional" who is also an "adaptive innovator" (Gardner, 2017, p. 73). The T-shaped profile is in opposition to I-shaped graduates, who acquire deep disciplinary knowledge (Gardner, 2017, p. 74): T-shaped professionals, through the vertical bar in the 'T', have "boundary crossing competencies" (Gardner, 2017, p. 75; Martin and Rees, 2019, p. 366). These boundary-crossing competencies "require every student to understand what they value and want to accomplish (purpose), develop confidence in their abilities to learn, discover, and adapt to a rapidly changing technological society, and become aware of the perspectives of others and how diversity enriches their ability to generate new knowledge" (Gardner, 2017, p. 75).

The notion of the T-shape in a skills context is credited to Guest (1991), who saw a T-shaped practitioner as "a practitioner who could effectively integrate business expertise and information technology skills" and is "capable of considering both the technical and social components within the larger system." A T-shaped manager would therefore "possess a deep knowledge in one field and recognition of other expertise", making them more versatile (Conley et al., 2017, p. 166).

This understanding of T-shaped skills is directly linked to expertise required and used in practice. Barile et al. (2015, p. 1178) argued that "multi-disciplinary and co-creation processes [are] necessary to develop a trans-disciplinary science". This argument points towards introducing an understanding among students and graduates that they need more than core

competencies and how these are used in themselves: they also need to understand how core competences can be used in an interdisciplinary context. Therefore, it is important to add inter-disciplinarity, where different perspectives in different academic fields (and in practice) work together, alongside a deep understanding and experience in combining academic fields. We need to begin this process during education programmes at the Master's level, because "an increasing need to move across different disciplines is questioning current higher education programmes which are still producing 'I-shaped' graduates, i.e. students with deep disciplinary knowledge, while a need for 'T-shaped' professionals has been widely recognized in the last decade" (Barile et al., 2015, p. 1178).

Skills, which in the T-shaped skills model are seen as cross-cutting and practical, can be included in the curriculum of Master's programmes in an employability context (Bridgstock, 2009). This means that potential candidates obtain skills represented in the vertical bar in a T during their Master's programme. These skills are boundary-crossing competencies like "teamwork, communication, perspective, critical thinking, global understanding, [or] project management" (Martin and Rees, 2019, p. 366), but also an understanding of different disciplines and an ability to value cross-disciplinary work (Barile et al., 2015). The employability skills present in the T-shaped model are therefore connected both to the core competences in the scholar's discipline and to skills necessary for practice (the job market).

Gardner (2017) agreed that students need to be engaged in a variety of ways in order to develop their T-shaped skills, and this is what is done in the employability work at Aalborg University in the Global Refugee Master's programme. We try to incorporate students' development of employability skills, transferable skills and/or T-shaped skills by embracing these skills in our teaching and including them in the curriculum during graduate students' ninth semester, called the mobility semester (Andersson and Balslev, 2022). Students must work in groups, thus developing teamwork skills; they must work with an external partner, thus developing transferable skills/T-shaped

skills and WIL; and they must also apply their academic skills (in combination with the employability skills). The argument here is that the skills we want our students to master are not simply something they have to figure out themselves when entering the job market: they have the skills when they leave university, because they have been integrated into the curriculum at Master's level.

Employers: What do they Think?

According to Clark et al. (2015, p. 134), there is a "perceived mismatch between the skills employers say they require and those usually inculcated by degree schemes". This is often the case on so-called classical degree programmes, where teaching only takes place at universities and which very often do not include external partners (Spronken-Smith and Harland, 2009). Andrews and Higson argued that employers think it important that students are able to think outside the box and that they have the capacity to think innovatively, which is often achieved by working in teams (2008, pp. 416–418). This was also found in interviews with stakeholders working with our ninth semester students. One of the companies with which our students collaborated was a start-up working in humanitarian assistance in the Global South. When asked whether this collaboration should continue in future semesters, the representative from this company said: "It is definitely something that universities should do more often, and companies should say yes to, but the company also needs to have a clear case and know exactly what the outcome should be." This indicates that collaboration is important, but also driven by the companies. Our idea, as instructors, was that students should be able to challenge the 'knowns' in the companies, which this representative acknowledged later in the interview: "we realized that collaborating with students ourselves—we also had to define a framework" and the collaboration with students "gave us some good ideas in terms of how we can work around the recommendations (from students) based on academia."

Another representative from a start-up company stated that they expected to gain another perspective and maybe some critical remarks on how the company worked with their product. She said: "Our expectation was to have the opportunity to gain critical remarks in relation to what was doable in a new context of which we had no prior knowledge" (Translated from original Danish). This company was working in a context which was new to them, and they perceived the student group they worked with as experts in this field.

Another skill which this representative highlighted was students' ability to argue for choices: "we expected them to challenge us and say 'ok, so you want things this way, but then you need to take this and this into consideration'." Students were equipped with competences whereby they could actually provide good insights to the company, which was valued by the company and changed the way it designed the product. In general, the students used the core competences obtained within their academic field, but also the skills they had achieved by working with problem-based learning in an interdisciplinary study environment.

Student Gains

As one of the external partners said, he expected students to have core knowledge of the specific field in which they were studying in order to contribute to the task they needed to solve for him and his organization. Students got to see themselves as experts in their field and observe that their knowledge is not only for academic papers and university exams, but they can use their competences in collaboration with partners:

> I will say that it was great. We learned the power of like, bargaining, the power of, like, okay, in the real world you are not going to get anything served, you need to get it yourself, get the contact yourself. You need to, like, be aware of texting them all the time, making these appointments, calling them when they don't text you back—so definitely the competences of the real world, that you are not going to get anything served,

> you need to get it yourself. So in that way, definitely, and this
> professional relationship, like, you know, they need to get
> something out of us and we meant to get something out of
> them (Interview Student Team 3, March 2020).

Students are aware of gaining experience by collaborating with companies
and organizations, either through internships or through periods of
collaboration as in this ninth semester (Andersson and Balslev, 2022). Many
ninth semester students chose to pursue internships instead of following the
semester described here at the university, and either way, they had
experience of working with an external partner, which improved their
employability (Helyer and Lee, 2012). One student expressed it this way:

> How to position ourselves as researchers, but also as
> consultants, against an organization that might have different
> values to you, and how you, yeah, despite that…if it is, like,
> emotional intelligence or whatever it is, how to be strategic … er
> … that's definitely something that I believe that we got out of it
> […]. I'm happy that this was part of the class, because obviously
> some students this semester were taking an internship and
> others were not getting outside experience, so it was nice once
> again to have a project with an outside organization. I think it is
> super important to have that" (Interview Student Team 4, March
> 2020).

One reason that it is important for students to have work-integrated learning
experiences as part of their curriculum is that they contribute to building the
transferable skills necessary for graduates to get jobs once they finish their
university education. This could be done by including career management
skills in the curriculum for graduate students: "The abilities required to
proactively navigate the working world and successfully manage the career
building process, based on attributes such as lifelong learning and
adaptability" (Bridgstock, 2009, 34–55).

Discussion

The job market increasingly demands flexible employees who are able to adapt to changing contexts and demands. "Individuals have to flexibly adapt to a job market that places increasing expectation and demands on them; in short, they need to continually maintain their *employability*" (Tomlinson, 2012, p. 413). This argument can be translated to a situation where I-shaped candidates will have a hard time finding jobs outside research, which demands competence within a discipline, and T-shaped candidates will have easier entry into the labour market. As stated by Barile et al. (2015, p. 1178):

> Since the second half of the twentieth century, what distinguishes advanced economies is their relationship with knowledge and the subsequent capability of innovation. An intense relationship exists in which knowledge and those who generate it are the key resources and the main sources of competitive advantage of the economic system itself and its socio-economic actors. This relationship runs so deep that expressions such as 'knowledge-based society' and 'knowledge economy' have entered common usage.

So, knowledge exchange is crucial in building creativity and innovation. We are hearing notions like 'co-creation' and 'agility' in flexible job markets: this speaks to candidates who can collaborate/co-create across disciplines and understand why the common result in interdisciplinary work presents a different solution than can be obtained in mono-discipline work. Since T-shaped skills are linked to innovation in a knowledge economy (Barile et al., 2015), universities, in order to better graduates' chances of entering the job market quickly, can benefit from including notions like transferable skills, WIL, T-shaped skills and employability when planning courses and semesters for graduate students.

The experience from the ninth semester presented in this paper shows that students and employers discover each other and become more aware of the possibilities derived from connecting when students are still at the university. Employers meet different types of student (and future graduates) whom they might not have met and discovered the worth of, and students gain insights into employers' demands along with knowledge of their own competences in a work situation. This gives them confidence in their own worth for future employers.

Conclusion

Transferable skills, WIL, T-shaped and employability skills are widely used notions when discussing university graduates' possibilities in the future job market. The argument in this paper is that there is a need to include these different competences in university curricula so that students have at least some of these competences when leaving university. Often university curricula are detached from the realities which greet students after graduation (Helyer and Lee, 2012; Clark et al., 2015).

In presenting and exploring the notions mentioned above, this paper has unfolded different ways to address the links between university and the job market, and especially how important it is to include the skills the students themselves represent in preparing students for post-graduate work. It has been argued that this must be done without ignoring students' need to gain the core competences in a discipline in order to be able to work in an interdisciplinary environment. Both students and participating potential employers in the mobility semester at Aalborg University expressed the importance of students having core knowledge in a field and being able to use this knowledge with confidence; being able to work in an interdisciplinary setting with an understanding of other disciplines and contexts; and, most

importantly, being able to address this in a way such that the common goal of collaboration is to achieve the best for all participating partners.

Authors' Disclosure Statement

All materials included in this article represent the authors' own work and anything cited or paraphrased within the text is included in the reference list. This work has not been previously published nor is it is being considered for publication elsewhere. No conflicts of interest exist which might have influenced us in reporting our findings completely and honestly.

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