Please cite the Published Version

Title: Getting Students Out There

Abstract
Purpose: This article discusses the 'Q-Step in the Community' placement programme, part of the Q-Step Centre based in the Sociology Department at Manchester Metropolitan University, designed to help address the skills gap in quantitative methods (QM) that is evident across parts of the UK Higher Education sector. 'Q-Step in the Community' is a data-driven work-based learning programme that works in partnership with local organisations to provide placement opportunities for final year undergraduates and postgraduates. Students conduct a quantitative research project, typically identified by the placement provider.
Design/methodology/approach: We use quantitative and qualitative feedback from students and placement providers, along with our own reflections on the process to evaluate the placement programme. Data were collected through a focus group and email interviews with placement providers, along with a questionnaire, which was distributed to 'Q-Step in the Community' alumni.
Findings: Data-driven work-based learning opportunities allow students to develop and demonstrate their quantitative skills, and support networking opportunities, while also developing valuable soft-skills experience of the workplace that develops their career-readiness. In addition, it provides valuable research for placement providers, which supports their sustainability and enhances their service delivery.
Research limitations/implications: This research focuses solely on one programme at one university offering quantitative data driven work-based learning opportunities at undergraduate and post-graduate level. It is not possible to make valid comparisons between those who do a placement with those who do not.
Originality/value: Views of key stakeholders in the process have been sought for this research, which can be useful to consider for others considering developing similar programmes for their students.
Key words: Higher Education, Work-based learning, employability, experiential learning, quantitative methods
Paper type: Research paper

Background: the UK 'Quants Problem'

This article reports on the 'Q-Step in the Community' programme at Manchester Metropolitan University. The Q-Step programme, funded by the Nuffield Foundation, the Economic and Social Research Council, and the Higher Education Funding Council for England, established 15 Q-Step centres across the UK, with the core aim of addressing the deficit of social science graduates with quantitative skills (Williams, et al. 2004; MacInnes 2009; Grundy 2020). Quantitative methods in the UK are often taught at undergraduate level in large compulsory research methods modules, where they compete for space with qualitative approaches (MacInnes 2010). Since the 1960s, a 'cultural shift' toward qualitative approaches has occurred, as has a preference for theory over empirical study (Blane, 2003; Parker et al., 2008). A critical point of contention is that without undergraduates interested in acquiring or applying quantitative skills, a downward spiral will eventually occur, resulting in a persistent shortage of quantitative academics and researchers to teach or use quantitative skills in the social sciences (Williams et al 2004). At the undergraduate level, the primary barriers to quantitative methods engagement are reported to be 'maths anxiety'; an inability to see the relevance of quantitative skills within the disciplinary context; a lack of opportunities to develop and practise quantitative skills outside of large research methods modules; and an inability to see the real-world relevance of quantitative skills (MacInnes 2009; Scott Jones and Goldring, 2015). With a specific focus on data-driven work-based learning, where students get the opportunity to apply quantitative skills in an applied context, this article investigates these latter two barriers. Our objective is that by examining this pedagogical approach, we will be able to provide a framework for students to practise and build their quantitative skills while simultaneously offering opportunities for them to use those skills in real-world research settings. This was achieved by establishing a placement programme that matched students with organisations to do quantitative research. Since its inception in 2013, we have engaged with over 60 organisations and 239 students who have conducted quantitative research on their behalf.

Incentivising Student Engagement

Manchester Metropolitan University's department of Sociology is one of the largest in the UK, with over 1200 undergraduate students in the academic year 2021. Following the development of a Q-Step Centre, the approach to teaching quantitative methods expanded significantly with the creation of a specific BSc Sociology/Criminology with Quantitative Methods programme. On the BSc route, the last year of study (Level 6) is focused on the Applied Quantitative Dissertation, supported by a core quantitative methods unit. Conscious of the risk of students disengaging from Quantitative Methods (henceforth QM), a critical component of the Q-Step approach at Manchester Met was to offer placement experiences to provide students with 'flying time' that presented the opportunity to apply what they learned in class to a real-world situation. 'Doing' research in an applied setting enables students to develop their QM skills and get practical experience of the research process, in ways that are not achievable while learning statistics in the classroom. The relevance of such skills to a broader disciplinary and 'real world' context becomes clearer to students (Cottone and Yoon 2020), which may lead them to seek out additional specialised skills. The primary factor for these data-driven work-based dissertations was the growing emphasis on 'career readiness' among undergraduates (Brooks and Youngson, 2016; Gibson and Tavlaridis, 2017; Morley and Jamil, 2021; Tomlinson, 2008), the desire to improve students' graduate outcomes (Clarke, 2017), and the critical nature of 'career-ready' skills that students can use to market themselves to potential employers

(Clark et al, 2015). Students on the BSc have two options when it comes to the dissertation - one is to conduct secondary data analysis (SDA) on an existing dataset, such as those available through the UK Data Service. The second option is to be placed in a local organisation to conduct applied research. To date, most students (n239) have chosen to complete the placement, compared to 119 who have chosen to complete SDA. This article discusses the outcomes of students engaged in level 6 applied quantitative research.

Our Model – 'Q-Step in the Community'

The data-driven work-based model we established is the 'Q-Step in the Community' placement programme. In establishing this programme, it was essential to ensure that the structure would support Manchester Metropolitan University's diverse student community. For example, our students are less likely to come from a traditional A-Level route, almost half are 'first generation' university students, and a significant proportion come from the poorest 20% of areas, as measured by the Index of Multiple Deprivation (Ministry of Housing, Communities and Local Government, 2019). It has also been noted that such students are more likely to attend their local university (Campbell et al. 2019). For these reasons, we sought out locally based organisations that were accessible to students, supported a system of local knowledge exchange based on the premise that 'knowledge travels on legs' (Conway et al., 2009: p2), and provided opportunities for students to apply classroom-based learning in a societal and local context (Clark and Zukas, 2016). As well as providing a way of overcoming potential barriers to participation for our students, this approach also ties into the increased push for civic engagement activities in higher education, and for activities which strengthen the connections between the university and the local community (Morley et al, 2021). Due to our students' other commitments, including childcare requirements and the frequent need for them to continue their part-time paid work, the decision was taken to run the placements throughout the academic year; typically, one day a week during the first and second terms. The focus of the research is determined by the organisation, but students either analyse existing data collected by the organisation or, where appropriate, will collect and analyse primary data. To help students in developing a stronger sense of identity with the organisations, they are also encouraged to volunteer or shadow someone in addition to their placement day. In addition, to offering students a broader perspective when writing their research report, this opportunity facilitates the transmission of cultural capital, and supports the development of confidence, both of which our students particularly need given their diverse backgrounds. The research they produce is submitted for their dissertation, and a copy is sent to the placement provider. This model is therefore quite different to the traditional model for placements, which in the UK typically take place either during the summer term or summer vacation, or it is part of a four-year sandwich degree, where the third year is spent on a placement. However, we were confident that this model would be more likely to appeal to our student body and would provide fewer barriers to participation than a more traditional model.

In developing the 'Q-Step in the Community' placement programme, we wanted to build a model in which all parties were judged to be of equal importance. We therefore adopted a social capital model in creating relationships with organisations that were mutually beneficial; meeting the collective needs of the university, the student, and partner organisation (Adamuti-Trache and Hyle, 2015). We have been keen to emphasise the potential for a long-term partnership with organisations, rather than this be a transitory relationship built on 'one-way transfers of goods'

(Stewart and Alrutz, 2012: p45). The intention has been for organisations to feel that they are partners in this mutually beneficial relationship, and to avoid a situation where an organisation was provided with a student but given little support, voice, or choice (Bringle and Hatcher, 2002).

Application, selection and recruitment

Students are aware that gaining relevant work experience increases their chances of securing a profession in their subject of study (High Fliers, 2019). This is frequently the driving force behind students' willingness to work on a placement. However, as with any placement programme, care must be taken with the selection process to secure the longevity of the 'Q-Step in the Community' placement programme. The application and selection process for placements is therefore deliberately rigorous (see Brooks, 2012), and has developed as the placements programme has evolved, so that career readiness lies at the heart of what we do. From the start of the selection process, students are encouraged to view themselves as 'proto professionals' (Hilton & Slotnick, 2005), a term which refers to the stage at which a learner gains experience and develops the skills and knowledge necessary to allow them to transition to professionalism. The selection process includes the consideration of students' previous marks and attendance patterns; a formal application in the form of a CV, cover letter and application form; an interview by two members of the Q-Step team, and an interview by the host organisation. The intention of this process is to support students with the development of career-ready skills (Brooks and Youngson, 2016; Gibson and Tavlaridis, 2017; Tomlinson, 2008).

Following placement confirmation, all Q-Step students are required to attend a week-long mandatory 'career-ready' training programme at the start of the academic year, prior to the commencement of the placement. The long-term success of partnerships is significantly increased by preparing students for a work culture, hence reducing the risk of the relationship failing (Diver 2020). The development of students' career-ready abilities is therefore a key component of the 'Q-Step in the Community' placements programme, as is the opportunity to reflect and develop strategies throughout the process (Eden, 2014). While the focus of the career-ready training has evolved over time, it has aligned with Hilton & Slotnick's (2005) notion of supporting the transition to a proto-professional, with a focus on ethics, teamwork, and the benefits of reflection and self-awareness. The intention is to foreground the concept of social responsibility, in that students owe a duty of care, not only to the organisation in which they have been placed, but also to clients served by the organisation. To evaluate the placements programme, we explore the experiences of the organisations who provided the placements as well as the students to went on them.

Methodology

We evaluate the 'Q-Step in the Community' programme using a mixture of methods, as this approach has been effectively employed previously in educational research (Fitzpatrick 2011; Bond, 2014). By collecting data from organisations and graduates, we embraced the concept of crystallisation, which entails gathering data from several different perspectives without favouring any one voice over another (Richardson 1994; Ellingson 2009; Richter & Allert 2017). The goal from this vantage point is to compile a narrative of opinion from people who participated in the course (Richter & Allert 2017).

The qualitative data consisted of a focus group, or email interviews conducted with placement providers who were contacted to ask if they would be willing to participate in the research/evaluation. Six organisations participated in the focus group, while another twenty organisations responded via email. Quantitative data was collected through a questionnaire to our alumni delivered via LinkedIn. The questions for both alumni and organisations focused on the advantages and disadvantages of hosting or carrying out a placement. While 45 graduates responded to the request for information, only 24 were used in this article as only they had undertaken placement-based dissertations. The confidential nature of the data where organisations and students could be commenting on each other meant it was not possible to acquire participant validation. To compensate for this, an inter-coder framework was established to encourage communicability, transparency and promote reflexivity and dialogue within research teams (O'Connor & Joffe,2020). To develop a trustworthy narrative (Nowell et al, 2017), the researchers used a version of constructivist grounded theory like that proposed by Charmaz (2000). The key themes to emerge were:

- For the organisations, the value of them investing in the initiative along with the additionality that students bring to the workplace.
- For the students, the long-term career benefits of developing a professional identity that results from applying their research skills and knowledge in a real-world setting.

The next section will explore the findings in greater detail and will mix the qualitative and quantitative data into a narrative based on the accounts from organisations and alumni.

Findings

The value of investing in time: Why organisations got and stay involved with 'Q-Step in the Community'.

A key theme to emerge from the analysis was that the organisations benefited from having a student placed with them. This was despite the time expenditures associated with taking a student in terms of, for example, performing risk assessments, training on data systems, and providing the relevant historical, policy, and cultural context of the origins of the organisation. Our partner organisations span the public and private sectors, from large voluntary sector organisations to small community projects, and engage in a varied range of activities; what connects them together is the fact that these organisations are data-rich but time-poor. Changes in the political and policy landscape over the last decade have seen an increasingly competitive funding climate for the UK's third and public sectors, with organisations being required to measure and demonstrate the impact of the services they provide (Macmillan & Ellis Paine, 2021). In addition, there is often a lack of capacity to analyse the large amount of data many organisations have accumulated over time, but which is needed to evidence the impact of their work. This has driven many to seek out external organisations capable of conducting such evaluations and is a key motivation for organisations to participate in the 'Q-Step in the Community' placement programme. Having their data analysed by an independent researcher allows them to incorporate the findings into funding bids, which strengthens the case that organisations can make to commissioners.

The additionality provided by the student was highly prized. Indeed, an existing partner organisation was unequivocal about the added benefits of participating in the project and having a student work

on their existing data: "we didn't necessarily have capacity to be analysing them ourselves, I guess because we were restricted by our funded work... So getting that kind of work for free was absolutely very valuable to the organisation' (LGBT charity, focus group). According to Smith et al. (2015), one of the primary benefits of placements to organisations is that such activities are cost-effective to the organisation; engaging students in a research role reduces the need to employ someone to carry out this activity or to pay for the research to be undertaken. What is particularly important here is that while the organisation provided a historical and policy context for students to ground their research, there is also a safeguard in place to ensure the quality of the work, as this is overseen by academic supervisors, as members of the Q-Step team.

Data collecting is an extra resource that Q-Step students bring to organisations. Indeed, for some, it was extremely appealing to have a student construct a questionnaire and gather data on their behalf. For example, one partner organisation needed to evidence their impact on the young people they support. They were aware that while they knew they offered a good service to their users, having independent research added much weight to this claim: 'we claim that we make a difference in young people's lives that we reduce antisocial behaviour in communities, but I guess we've never really proved that' (youth charity, focus group). Similarly, another partner organisation told us that the student's research provides them with 'improved service delivery' along with 'more interaction with the people we support' (charity working with older people, email). As a result of their participation in the 'Q-Step in the Community' initiative, these organisations have been able to combine anecdotal evidence with statistical evidence to support their interactions with their board members and funders.

Another significant benefit for certain placement providers was the training and support that students frequently deliver to organisational workers for them to better understand their data and findings. This could include explaining the underlying narrative that the data produces; how to more effectively collect and analyse data; as well as ethical considerations for data security. The key point here is that focusing on the requirements of the organisation has helped us to form and sustain these important partnerships. In part, we extended Stewart and Alrutz's (2012) premise of compassion, flexibility, and patience to incorporate the concept of social capital, in this case taken to mean that all parties should benefit from the developing relationship. With this in mind, all conversations with potential organisations begin with 'how can we help you,' confident that as well as helping the organisation, this approach will also benefit us, as well as the student.

Students as assets in the workplace

Beyond the research output, organisations commented on the 'positive experience' of having a student working with them: the contribution students have made to the organisations in terms of their volunteering was described as a 'tremendous asset' (public sector organisation, email). In addition, having a student has been seen as 'something different' for a number of organisations: 'staff could engage with…bright faces around the office' (youth charity, focus group); 'it changes the dynamic a little bit…the staff members want to show [the student] how good they are' (youth charity, focus group); 'they ask lots of sort of basic questions like 'why do you do that?' and 'why don't you do that'. That's a challenge for us. It's good, it's all good' (public sector organisation, focus group).

Organisations also highlighted the time commitment in terms of supporting a student, and that the requirements of their own workload sometimes made this 'difficult': 'there were times when [student] would have liked a bit more, but she had to deal with what she got really' (youth charity, email). However, the research reports submitted by the students appear to strike an appropriate balance between the time expenditure required to support the student; and the benefits gained by the organisation because of the research. For instance, a LGBT charity reported that the value of what they were getting meant they were happy to put in a bit of time to support the student. The success of the research has led many partner organisations to start providing greater focus in their research briefs. This was not always the case at the start of the initiative which, in the absence of a clear research focus was a little 'scary' and 'difficult' (2015 and 2016 Q-Step graduates). We found that having a specific research focus was critical to the placement's success. For the organisation, having a well-defined research brief ensured they understood what to expect at the end of the project. For students, the benefits include knowing what is expected of them, determining whether the research matched with their interests, and most importantly, the sense that they were fully supported by their host organisation.

Students as 'proto-professionals'

Placement learning supports the development of professional skills, along with an increased awareness of workplace culture. What is more, such opportunities help students to move away from their student habitus (Holton, 2015), and begin to develop the habitus of a professional. Whilst the concept of habitus is not an uncontested term, the notion of a student habitus is used here to refer to behaviour which is more passive and led by others (McKinnon, 2016), whilst a professional habitus here refers to qualities identified as being characteristic of successful professionals (Spence and Carter, 2014). The benefit of being in a professional environment was a point raised by student respondents, with one student noting that 'even though we learn how to do SPSS and stuff in Uni there's a lot more outside skills that you need to learn from that environment' (2017 Q-Step graduate). This is a point echoed by placement providers, who made reference to students learning 'about the workplace and how it operates' (youth justice charity, focus group), respecting 'the rules of the office' (public sector organisation, email), 'talking to people that [they are] not that familiar with (youth justice charity, focus group), and 'being able to conduct themselves in a professional space' (youth charity, email). What is of note here is that 63% (n15) of survey respondents were first generation students and likely still developing their professional identity. Indeed, the notion of habitus (for example, Bourdieu 1987) refers to the 'feel for the game' and this is something the students develop as part of their placements. Organisations also commented on this by emphasising that students 'realised that they needed to step up a little bit…in terms of coming in and knowing a professional space and being able to conduct themselves' (youth charity, focus group). This shift to a more professional habitus is therefore a sharp, but important, learning curve for some students, as they adjust to conducting themselves in a professional manner; to having to wait a little longer for replies to emails, to being less of a priority to organisations than they might be used to, and to not being able to get immediate answers to questions they might have.

Getting a foot in the door

Having a placement experience is, for the majority of our alumni, something which will help them 'to get my foot in the door at interviews' (2019 Q-Step graduate). Indeed, this was one of the most

often mentioned reasons in the questionnaire, with 54 percent (n13) of graduates reporting that their placement experience helped them prepare for job interviews. However, 42% (n10) of those who participated in the placement reported not feeling prepared at interview, suggesting that not all alumni found the experience beneficial, possibly for the reasons discussed above. Feedback from graduates suggested that their placement experience allowed them to 'feel like an employee' (2019 Q-Step graduate), 'helped me get career-ready and enabled me to work on my networking skills' (2018 Q-Step graduate), and that they understood more about being in a professional environment, and of how organisations work. Another 2018 Q-Step graduate noted that they 'enjoyed working within a professional environment, [gaining] confidence and skills' they would not otherwise have got. Again, this is reflected in the quantitative data, with 63% (n15) reporting that the placement experience had helped adapt more quickly into the workplace. Additionally, two-thirds of graduates felt that their placement experience provided them with critical transferable skills for entering the workforce. As the graduate below explains, this extended beyond QM and was applied to their primary field of study (criminology or sociology):

> 'As much as Uni is a great experience, we don't get prepared for the real world. We know things, but we don't know how to apply them and it was nice to see how people apply these things to everyday life and what they have to do. It is two completely separate things, sitting in a lecture theatre and seeing it in practice' (2015 Q-Step graduate).

The latter point echoes the work of Bennett et al (2013) in their discussion of work placements in the Irish medical profession and suggests that a placement environment provides students with the opportunity to apply theoretical knowledge to a professional situation. These findings also suggest that students, and alumni, are transferring their placement learning to support their employability and career-readiness. To account for this learning, a reflective component has been added to the grading system which, for placement students, constitutes 20% of the report grade. While reflection appears to be undervalued in quantitative approaches, a growing number of authors recognise the benefits for the research process and findings (for instance, see Ryan & Golden 2006; Usher 2021; Walker et al, 2013). By incorporating this technique, students can make better use of their field experience, recognise the value of the report's narrative, and frame the statistical analysis as just one component of their research journey.

The narratives above demonstrate the importance of academic support that is adaptive to the needs of placement students as they embark on their existential journey into the realms of 'dirty data', especially as they develop their new research roles and identities. Working with problematic data is a challenge for our students but is also one of the key benefits of working in an applied context, as they foster a problem-based learning style in which they act as both the centre of the problem and the centre of the solution. When managed correctly, this therefore is framed as a positive in that it provides additional data experience. As previously noted, the feedback provided by alumni demonstrates that doing a placement was viewed as extremely beneficial in terms of shaping their future: 71% (n17) of graduates responding to the questionnaire stated that their current jobs need them to apply their data-related skills. Additionally, 63% (n15) stated that their placement experience helped them in getting a graduate job. Placement experiences do not always have positive outcomes for students; we move to discuss this in the following section.

Commitment issues: student wobbles and the question of size

We have encountered barriers to engagement and involvement for both students and partner organisations in the development of the 'Q-Step in the Community' programme. For organisations, resourcing has undoubtedly been a restricting factor, as a lack of resources may mean that it is not feasible for them to be able to support a student on their placement, or that they were not able to guarantee a positive student experience. For instance, there have been occasions when an organisation does not provide the appropriate support, which can leave the student feeling adrift in their placement, and unsure of what is required of them. When this does happen, it is important to discuss this with the organisation and to try and resolve this sooner rather than later. There has also been an instance when student had to be removed from the organisation owing to being asked to perform something we thought inappropriate and placing them in danger. As such, while relationships with organisations are important, they should never take precedence over the student's well-being. There have been other instances when organisations may wish to over-commit, and seek to recruit a large number of placement students, perhaps to improve their evidence base within a relatively short period of time. We have found that a small number of placement students in one organisation is preferable (three students as the absolute upper limit) due to the students' requirement for supervision. There is therefore a need for a level of caution, and a degree of flexibility when developing placement programmes such as this.

On the part of students, we frequently encounter data-related worries and 'wobbles', particularly as they begin their data analysis work. Work-based learning allows students to work independently; it also requires a certain amount of pragmatism and flexibility in order to negotiate obstacles (see Kettis et al., 2013) This can be quite intimidating for students, and we have come to expect that a small number will experience 'wobbles' as they negotiate their new role as proto-professionals (Hilton & Slotnick, 2005), and the frequently intimidating or problematic datasets required for their research reports. Whilst we are clear that the student is required to tell the story of the data that is available to them, students can be concerned about the size of their dataset; either that it is too big, or too small. For instance, students with access to larger datasets report feeling 'overwhelmed' by the magnitude of the task. It is worth noting that organisations' datasets may well be in poor condition, with data being entered by staff that lacked training or expertise, frequently resulting in errors and omissions. While Q-Step students have some prior expertise with large datasets, they are typically customised and sanitised for their Level 5 QM studies. Once in the field, and without a structured dataset to analyse, even the most confident students may struggle to find a 'hook' for their research.

However, the survey responses indicate that where Q-Step graduates were disaffected by their placement experience, this tended to be because their data was 'basic', and they were therefore unable to use their data analysis skills (17%, n4). In a very small number of cases, it has led students to withdraw from the placement experience, and to instead choose to analyse secondary data for their dissertation in order to perform higher level statistical techniques. Where this has happened, and in order to fulfil our commitment to the organisation, we have replaced the student with a postgraduate student where it was appropriate to do so or have required that the student produce a report for the organisation following the submission of their dissertation. On the flip side of this, placement students working with very limited data frequently produce a detailed and thorough analysis with a clear narrative; this is clearly of benefit to the organisation as it will allow them to build processes to better serve their clients, and the student is also awarded with a high mark for their work. However, in an attempt to overcome the issue of students' dissatisfaction with the data,

all students are asked in their initial interview with the Q-Step team about their preference when working with data: whilst this is not fool proof, this strategy has allowed us to identify where there might be a potential mismatch between the student and the host organisation.

Where are they now?

In the survey of our alumni (n20), 87% placement participants felt that they were more employable. Interestingly, 22% (n5) of them also stated that on reflection, doing an SDA dissertation would have likely been better for them than doing the placement. As discussed above, this was due to their concerns about the 'basic' level of the data they were working with, or their perception of a lack of support from their host organisation. Of course, this means that 78% (n18) would not have changed their placement experience. 71% (n17) are using statistics in their current role, whilst several respondents noted the way in which the BSc and their placement had made them 'more ambitious', through highlighting 'new roles and fields, ones which I would not have considered'. It is worth noting that less than half (43 percent n10) of participants had a positive experience with maths prior to enrolling at university. Anecdotally, Manchester Met Q-Step graduates have secured jobs working with data soon after, and increasingly before, graduation, possibly because of their increased employability following their placement experience. Respondents to the alumni survey referred to increased levels of confidence, to having 'something really interesting to talk about in an interview', stating that their placement experience 'helped me to get a job' (2018 Q-Step graduate), and 'having a lot of skills and knowledge I could transfer [to my current role]' (2017 Q-Step graduate). One respondent stated that they were promoted 'to a management role at a younger age' than would otherwise have been possible (2017 Q-Step graduate). Students are also securing work in the organisation where they completed their placement, as a direct result of the work-based placement programme which, in some respects, allowed the organisation and student to trial each other before committing themselves. In some instances, a role has been developed for the student upon graduation. This appears to align with research by High Fliers (2019) which highlights the importance of work experience schemes as a means of recruiting new graduates. A significant number of Q-Step students take up further study with us via the MSc in Applied Quantitative Methods, now in its sixth year. In addition, a number of former Q-Step undergraduates are carrying out PhD research, all of which incorporate quantitative methods. What is clear is that our students are seizing the opportunity to specialise in quantitative methods and have both the confidence and competence to pursue this as a career path.

Conclusion

This article has evaluated the Manchester Metropolitan University Q-Step Centre's data-driven work-based placement programme, and specifically the opportunities and challenges that have helped its development and evolution since its inception in 2013. Whilst this research is limited in its scope, with its focused on one placement programme within a post-92 institution, we believe it that this article will help other higher education institutions in developing a placement programme. There is a clear benefit to students in participating in placement opportunities, notably through the development of career-ready skills and the creation of potential routes into employment. Coupled with this is the important point that students on this programme are working with, and analysing quantitative data, which helps to address the skills shortage with regard to quantitative methods

(MacInnes, 2009). Students on placements begin to develop their professional habitus while still undergraduates and understand the importance that quantitative research skills have for their employability prospects. This is in addition to their increasing confidence and ambition to pursue jobs where they can use their data skills. The benefits to the students, however, can only arise from a successful partnership with organisations willing to offer them a placement opportunity. The development of a social capital model which prioritised the demands of all stakeholders has therefore been the most appropriate strategy for this placements programme. What is noteworthy is that our partners have appreciated the benefits of working with a student. It is clear, based on the testimonies of organisations and alumni, that the 'Q Step in the Community' programme has facilitated important knowledge exchange; mobilising and transferring both QM skills and employability skills between students and placement organisations.

References

Adamuti-Trache, M., and A. E. Hyle (2015). "Building University-community Partnerships."
In *Community Engagement in Higher Education: Policy Reforms and Practice*, edited by W. J. Jacob, S. E. Sutin, J. C. Weidman, and J. L. Yeager, 73–88. Rotterdam: Sense Publishers.

Barbour, S. B. (2001). "Checklists for improving rigour in qualitative research: a case of the tail wagging the dog?" *BMJ* 322: 1115-1117.

Blane, D. (2003). The use of quantitative medical sociology. *Sociology of Health and Illness*, 25, 115–130.

Bennett, D., McCarthy, M., O'Flynn, S. and Kelly, M. (2013). In the eye of the beholder: student perspectives on professional roles in practice. *Medical Education*, 47: 397-407. https://doi-org.mmu.idm.oclc.org/10.1111/medu.12114.

Bond, C. (2014). The psychological impact of receiving tutor feedback in higher education: A mixed methodological approach. In *SAGE Research Methods Cases.*

Bringle, R. G. and Hatcher, J. A. (2002). Campus–Community Partnerships: the terms of engagement. *Journal of Social Issues*, 58: pp503–516.

Brooks, R. (2012). 'Evaluating the impact of placements on employability', in:
Employability, Enterprise and Citizenship in Higher Education Conference 2012, 27 March 2012, Manchester Metropolitan University (Unpublished).

Brooks, R. & Youngson, P. L. (2016). Undergraduate work placements: an analysis of the effects on career progression, *Studies in Higher Education*, 41:9, pp1563-1578.

Campbell, S., L. Macmillan, R. Murphy, and G. Wyness. (2019). "Inequalities in Student to Course match: Evidence From Linked Administrative Data." CEP Discussion Paper 1647.

Charmaz, K.(2000). Grounded theory: Objectivist and constructivist methods. In Denzin, N., Lincoln, Y. (Eds.), *Handbook of qualitative research* (2nd ed., pp. 509–535). Thousand Oaks, CA: Sage.

Clark, G., Marsden, R., Whyatt, J.D., Thompson, L., and Walker, M. (2015). '"It's everything else you do…": alumni views on extracurricular activities and employability', *Active Learning in Higher Education*, 16(2), pp133-147.

Clark, M. and Zukas, M. (2016). 'Understanding successful sandwich placements: a Bourdieusian approach', *Studies in Higher Education*, 41:7, pp1281-1295, DOI: 10.1080/03075079.2014.968121.

Clarke, M. (2017). 'Rethinking graduate employability: the role of capital, individual attributes and context', *Studies in Higher Education*, 43:11, pp1923-1937.

Conway, C., Humphrey, L., Benneworth, P., Charles, D. and Younger, P. (2009). 'Characterising modes of university engagement with wider society: a literature review and survey of best practice'. Available at: https://talloiresnetwork.tufts.edu/wp-content/uploads/Characterisingmodesofuniversityengagementwithwidersociety.pdf. Accessed 15th November 2020.

Cottone A.M, Yoon S. (2020). Improving the Design of Undergraduate Biology Courses toward the Goal of Retention: The Case of Real-World Inquiry and Active Learning through Metagenomics. *J Microbiol Biol Educ*. Apr 10;21(1):21.1.13. doi: 10.1128/jmbe.v21i1.1965.

Diver, G. (2020). 'Emotional challenges and pre-placement preparations: a cross-disciplinary, longitudinal study of "learner-worker" undergraduates (in an Irish HEI)', *Higher Education, Skills and Work-Based Learning*, Available at: https://www.emerald.com/insight/content/doi/10.1108/HESWBL-03-2019-0038/full/html. Accessed 30th November 2020.

Eden, S. (2014). 'Out of the comfort zone: enhancing work-based learning about employability through student reflection on work placements', *Journal of Geography in Higher Education*, 38(2), pp266-276.

Ellingson, L. L. (2009). *Engaging crystallization in qualitative research*. SAGE Publications, Inc. https://www.doi.org/10.4135/9781412991476

Fitzpatrick, K. (2011) "A Mixed Methods Portrait of Urban Instrumental Music Teaching," Journal of Research in Music Education, 59(3), pp. 229–256.

Grundy, S. (2020). The Past, Present and Future of Q-Step – A Programme Creating a Step-Change in Quantitative Social Science Skills. *Numeracy*. 13. 10.5038/1936-4660.13.1.2.

High Fliers Research (2019). 'The Graduate Market in 2014' London: *High Fliers Research Limited*, Available at: https://www.highfliers.co.uk/download/2019/graduate_market/GMReport19.pdf. Accessed 16th October 2020

Hilton, S.R. & Slotnick, H.B. (2005). 'Proto-professionalism: how professionalism occurs across the continuum of medical education', *Medical Education*, 39(1), pp58-65.

Holton, M. (2015) 'Learning the rules of the 'student game': transforming the 'student habitus' through [im]mobility', *Environment and Planning*, 47(11) pp2373-2388.

Kettis, Å. Ring, L. Gustavsson, M. & Wallman, A. (2013). 'Placements: an underused vehicle for quality enhancement in higher education?' *Quality in Higher Education* 19:1, pp28-40.

MacInnes, J. (2009). Proposals to support and improve the teaching of quantitative research methods at undergraduate level in the UK. *Economic and Social Research Council*, Swindon: Available at: https://esrc.ukri.org/files/research/qmi/final-report-strategic-advisor-for-quantitative-methods-proposals-to-support-and-improve-the-teaching-of-quantitative-research-methods-at-undergraduate-level-in-the-uk/Accessed 6th November 2020.

Macmillan, R. & Ellis Paine, A. (2021). The third sector in a strategically selective landscape - the case of commissioning public services. Journal of Social Policy, 50(3), 606-626.

Morley D.A. et al. (2021). Working and Learning Through the Local Community: Four Case Studies from Higher Education That Promote Civic Engagement. In: Morley D.A., Jamil M.G. (eds) *Applied Pedagogies for Higher Education*. Palgrave Macmillan, Cham.

Nowell L.S., Norris JM, White DE, Moules NJ. (2017). Thematic analysis: striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*. 16(1).

O'Connor C, Joffe H. (2020). Intercoder Reliability in Qualitative Research: Debates and Practical Guidelines. *International Journal of Qualitative Methods.*

Richardson, L. (2000). Writing: A method of inquiry. In N.K. Denzin & Y.S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 923–943). Thousand Oaks, CA: Sage Publications.

Richter, C. & Allert, H. (2017). Design as critical engagement in and for education. *EDeR - Educational Design Research, 1*(1), 1-20.

Ryan L, Golden A. (2006). 'Tick the Box Please': A Reflexive Approach to Doing Quantitative Social Research. *Sociology*.40(6):1191-1200.

Scott Jones, J. & Goldring, J.E. (2015). 'I'm not a quants person'; key strategies in building competence and confidence in staff who teach quantitative research methods', *International Journal of Social Research Methodology*, 18(5), pp479-494.

Slettebø T. (2021). Participant validation: Exploring a contested tool in qualitative research. *Qualitative Social Work.* 20(5):1223-1238.

Smith, S. Smith, C. & Caddell, M. (2015). 'Can pay, should pay? Exploring employer and student perceptions of paid and unpaid placements' *Active Learning in Higher Education*, 16(2) pp149-164.

Spence, C. and Carter, C. (2014). 'An exploration of the professional habitus in the Big 4 accounting firms', Work, Employment and Society, 28(6), pp. 946–962.

Stewart and Alrutz (2012). 'Meaningful relationships: cruxes of university community partnership for sustainable and happy engagement' *Journal of Community Engagement and Scholarship*, 5(1) pp44-55.

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*, Vol. 29 No. 1, pp. 49-61.

Usher, L.E. (2021) The case for reflexivity in quantitative survey research in leisure studies: lessons from surf research, *Annals of Leisure Research*.

Walker S, Read S, Priest H (2013) Use of reflexivity in a mixed-methods study. *Nurse Researcher*. 20, 3, 38-43.

Williams, M., C. Collett, and R. Rice. (2004). "Baseline Study of Quantitative Methods in British Sociology." C-SAP/ BSA.