

Full curriculum-based venture creation programmes

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Full Curriculum-Based Venture Creation Programmes: Current Knowledge and Research Challenges

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Abstract

Purpose

Full curriculum-based Venture Creation Programmes (VCPs) are a relatively new and potentially underutilised form of degree programme in which students explore the on-going creation of a new venture as a primary aspect of their formal study. The highly experiential nature of VCPs has the potential to meet the calls of researchers and policy makers for students to actively participate in and control their own learning for enterprise and entrepreneurship. However, research into VCP's remains limited which constrains their development. The purpose of this paper is, therefore, to review the literature surrounding VCPs in order to investigate the current research and explore areas for further study to support the development of these courses.

Methodology

A systematic literature review was conducted in order to find and explore literature around VCPs, defined here as credit-bearing whole programmes of study, focused on learning for entrepreneurship, with the creation of a real-life business venture as an integral part of the learning experience, on which completion of the programme is dependent. First, academic literature published in peer-reviewed journals was collected through a systematic search. In parallel with this, academic colleagues working in this space were contacted for recommendations of literature and for information on work in progress. This led to additional emerging work being discovered that is primarily being presented at conferences. A further general Internet search was conducted to find non-academic information, reports and literature relating to VCP practice.

Findings

Four themes were explored covering the entire student journey 1) application and recruitment; 2) teaching, learning and assessment; 3) development of entrepreneurial identity; and 4) entrepreneurial outcomes. The literature presented in the paper suggests that VCPs can meet calls to provide an innovative curriculum based on experiential learning principles. VCPs can provide a positive learning experience in addition to leading to actual business start-up during the degree or after graduation.

Value

This paper presents a comprehensive review of literature focussing on VCPs. Recommendations are made for further research. A key question remains: if full VCPs have the potential to enhance learning, produce positive business outcomes, and address policy calls, why are there so few known VCPs at universities around the world?

Introduction

Venture Creation Programmes (VCPs) are highly applied business-development degrees, delivered in Higher Education Institutions (HEIs), which place an emphasis on experiential learning leading to the creation of new ventures. Therein, students participate in an undergraduate (UG), or postgraduate taught (PGT) accredited programme of study through the active exploration of actual business start-up (Lackéus and Williams Middleton, 2011). This methodology is said to be a highly contextualised experience, allowing learning activity to synchronise with key moments in the venture development lifecycle (Bozward and Rogers-Draycott, 2017 and 2020).

In this context, VCPs can be viewed as a response to longstanding arguments that traditional methods of teaching and learning are insufficient when educators are attempting to equip individuals with the knowledge, skills and experience required to create and manage entrepreneurial businesses (Higgins *et al.*, 2013). Increasingly, researchers have argued that entrepreneurship students need to actively participate in and control their own learning to develop as entrepreneurs (Bell and Bell, 2020). These conversations are characterised by a focus on learning experiences which are action based (Rasmussen and Sørheim, 2006) and experiential (Mason and Arshed, 2013; Jones *et al.*, 2014). Policy makers and commentators have echoed these views (Gibb, 2005; Martínez *et al.*, 2010; Anderson *et al.*, 2014), although they note that putting these approaches into practice is not a straightforward process, requiring a shift away from traditional education approaches and a bureaucratic control culture (Jones and English, 2004; Collins *et al.*, 2006; Rae, 2009).

VCPs certainly offer an applied, experiential approach to learning, but they are few in number (Larsen and Holtan Lakså, 2021), and although there is a suggestion in the literature that they have a positive impact on students (Bozward and Rogers-Draycott, 2020) ultimately, there is limited supporting evidence (Lackéus and Williams Middleton, 2015; Haneberg *et al.*, 2019). In addition to this, questions pervade regarding the best ways to structure these courses (Morland and Thompson, 2016, Bozward and Rogers-Draycott, 2020, Lackéus, 2020), the student characteristics and institutional context of VCPs (Bell, 2020), and the factors which are critical to their success (Aadland and Aaboen, 2020).

Questions about the structure, context, and success factors of VCPs suggest that significant additional research into VCPs is needed, and that this research in turn will support both the development of current and future programmes, and encourage further scholarship in this field. Some knowledge exists, however, and this paper will present a systematic literature review to explore why and how students select such programmes as their degree of choice, how VCPs are delivered, and the impact that they have on individual and economic outputs. To achieve this, the paper will focus on themes which can support the scholarship of VCP teaching and learning, and that address the whole student journey. This aligns with recent work by Haneberg *et al.* (2019) who proposed research agendas for entrepreneurship education from the teachers' point of view, the learners' point of view and the institutional point of view. The themes explored here are therefore: 1) application and recruitment (of particular interest to teachers and the institution); 2) teaching, learning and assessment (learners and teachers); 3) development of entrepreneurial identity (learners and teachers); and 4) entrepreneurial outcomes during and after graduation (teachers and the institution).

The contribution made by this paper is to draw together current thinking on VCPs to explore their impact, structure, and outcomes, and to use this to highlight areas for further research which the authors hope will support the development of the field. First, the paper provides a

background to the development of full VCPs as an approach to entrepreneurship education. Secondly, we will describe the methodology used to collect and review the research literature and other information on VCP programmes. We next provide an overview of the VCP research literature at UG and PG levels in order to identify areas using the four themes above and to highlight where research at either level is lacking. The UG and PG split follows findings from Pittaway and Edwards (2012) that general entrepreneurship education has a more didactic ‘about’ focus at UG level, and a more practical ‘for’ focus at PG. The final section will summarise the key findings and areas for future research.

A Short History of Venture Creation Programmes

Exploring the proliferation of the VCP model as a mode of study is challenging because of the limited attention this has received in the literature. Two key articles (Lackéus *et al.*, 2011; Lackéus and Williams Middleton, 2015) suggest that the earliest VCPs were founded in the mid 1990’s, and that the majority of the best-known programmes internationally were formed between this date and the mid 2000’s. That said, these papers were relatively limited in scope, and they didn’t seek to explore the formulation of the programmes and their antecedents.

While the early work described above showed the existence of three or four parallel strands of programme development in the USA and parts of Europe, further research for this paper suggests other potential strands in mainland Europe and the UK (Tosey *et al.*, 2015; Adams, 2016; Smith and Shaw, 2018; Bozward and Draycott-Rogers, 2020), the USA (Barr *et al.* 2009; Meyer *et al.* 2011; Mandel and Noyes, 2016), and Singapore (Wong *et al.*, 2007). There are likely others, but it can be difficult to identify and confirm the nature of such programmes because of definitional differences surrounding VCPs, and the diverse literatures in which they are discussed, often as little more than a mention in passing. Although they may not be whole, credit-bearing programme-type VCPs themselves (see Definitional Challenges below), initiatives such as Technology Entrepreneurship and Commercialization (TEC), first aimed at graduate students in North Carolina State University in 1995 (Barr *et al.*, 2009), and the University of Oregon’s Technology Entrepreneurship Program (TEP) launched in 2001 (Meyer *et al.* 2011) might be considered antecedents to such programmes.

It would appear that earliest researched VCPs began to emerge in Finland in the early 1990s with the creation of the Team Academy model (Belet, 2013; Davey 2018a and 2018b;). The first Team Academy programme was founded in 1993 at JAMK University of Applied Sciences in Finland, based on Nonaka and Takeuchi’s (1995) principles of knowledge creation (Csapó *et al.*, 2013), ideas from Senge, and from others on organisational and team learning (Tosey *et al.*, 2015). The approach tends to be differentiated from other forms of VCP through its strong focus on team entrepreneurship, personalised learning, and use of coaching sessions rather than formal lectures. However, there is no evidence to suggest that this was a progenitor programme from which all other VCPs developed. Indeed, other forms of VCP do not conform to this model.

A parallel set of VCP programs employ more traditional modular course structures to deliver content and facilitate progression through the degree. Students on these courses are expected to actively look to create businesses variously through, and alongside their modules, often with additional support from mentors and business professionals (Lackéus and Williams Middleton, 2015; Smith and Shaw, 2018; Bozward and Rogers-Draycott, 2020). Attempting to ascertain the drivers behind the creation of modular VCPs is difficult, given that discussions of their establishment are rare in the literature. The authors of this paper found evidence, supported by

communication with some of the course founders, which confirm a range of reasons for their development, however.

The VCP course at Chalmers University in Sweden was, for example, created by staff to address specific commercialisation challenges through the application of a surrogate entrepreneurship approach (Lundqvist, 2014), pairing nascent entrepreneurs with fledgling concepts to create spin-out companies (Lundqvist, 2015). Informal conversations with colleagues at the Norwegian University of Science and Technology (NTNU) confirm that the work at Chalmers was an inspiration underpinning the development of their VCP, but that requests from students for deeper entrepreneurial learning experiences were the central catalyst. Student demand driving the creation of the programme is a theme echoed in conversations with colleagues from Babson College in the USA who confirm that this triggered their foray into the creation of a VCP. In the UK, some VCPs were at least informed by existing programmes: the VCP at the University of Buckingham was inspired by the model from Babson (Lockyer and Adams, 2014), and the VCP at University of Worcester reviewed all the existing VCPs in the UK, including the Team Academy programme at the University of West of England (UWE), using this work as the basis for the course they created (Bozward and Rogers-Draycott, 2020).

To further complicate matters there are also programmes or courses that are VCP-like or include VCP-type activities, but which are not actually VCPs as they form a small part of a programme, or where the business start-up experience is not a formal part of the programme being studied. These include short, time-limited venture experiences (Lackéus, 2018), adjunct programmes of study (e.g., Peterson *et al.*, 2002; Barr *et al.*, 2009, Meyer *et al.* 2011), extra-curricular activities (Preedy and Jones, 2015), entrepreneurship placement schemes (Smith and Clegg, 2017), and student enterprise societies (Preedy and Jones, 2017).

Definitional Challenges

In an effort clarify the definitional difference between VCPs and other types of course, Lackéus (2018) used the term ‘full’ to differentiate substantive in-curriculum VCPs from ‘mini’ entrepreneurship courses with which they are sometimes conflated. In this model, ‘mini’ courses are characterised by the operation of time-limited ventures which are designed to be closed on completion of the students’ studies, while ‘full’ courses have ‘the ongoing creation of a real-life venture as their primary learning vessel’ (Lackéus and Williams Middleton, 2011 p5). Generally, this venturing will take the form of a project that spans a significant part of the students’ study, which is designed with the intention that it will continue trading (in an appropriate form) following completion of the course. Bozward and Rogers-Draycott (2020 p288) propose a similar typology using the term ‘true’ to differentiate VCPs which ‘embed a mandate for the creation of a functioning venture at their core and/or make the development of this a requirement for the completion of the course’ from other business programmes.

Most recently, Larsen and Holtan Lakså (2021 p5) used thirteen criteria to try to ascertain if a course was a VCP or not. Of these, they noted that five were crucial for mapping VCPs:

1. Academic credits
2. Real-life business venturing as a formal part of their studies
3. The intention of students to incorporate
4. The intention of students to continue to work with their venture after graduation
5. The intention of faculty that students continue to work with their venture after graduation

While the five criteria above evidently draw on prior work, they also extend this by placing the onus for developing the venture directly on both staff and students, reflecting the need for both student and institutional involvement in the process.

The central challenge in operationalising the set of criteria above is that points 3 to 5 set a difficult threshold for VCPs to meet. Not all Team Academy programmes, for example, place the intention to continue the operation of the venture post-graduation at the centre of their practice. Yet, it would be difficult to argue that they are not a form of VCP given their other elements. However, without a sufficiently robust definition, the challenge of what separates a VCP from any other entrepreneurship programme looms large. To that end the authors suggest that their own work (Bozward and Rogers-Draycott, 2020), and the work of Lackéus (2018) may offer a more useful position, namely, that there should be a mandate for the creation of a functioning venture at the core of the programme, and that this should be a requirement for the completion of the course. This is a more inclusive position, which still maintains the onus (albeit implicitly) on staff and students to develop the venture.

It is also worth noting that point 3 of the Larsen and Holtan Lakså (2021) definition above may not be applicable in all instances as some countries (the UK for example) have trading models which do not require formal incorporation.

Finally, it is also important to note that the primary focus of VCPs is not on learning ‘about entrepreneurship’ characterised by the academic study of entrepreneurial activity (Pittaway and Edwards, 2012; Adams, 2016). Instead, they encourage students to learn ‘for entrepreneurship’ and ‘through entrepreneurship (Pittaway and Edwards, 2012; QAA, 2018,) with a strong focus on action-based and experiential learning (Beard et al., 2006; Williams Middleton and Donnellon, 2014; Haneberg and Aadland, 2020). VCPs therefore not only develop students’ knowledge and understanding of entrepreneurship and its related skills and abilities, which Larsen and Holtan Lakså (2021) recognise, but also, importantly, their experience of the practice of entrepreneurial activity. For this reason, they are described by Lackéus (2012) as advanced examples of the entrepreneurial learning process itself and fit within Jones’ (2019) call for the identification of entrepreneurial agency as the primary focus, or minimal outcome as a ‘signature pedagogy’ for entrepreneurship education.

Taken together, this work suggests an operational definition of a VCP: a credit-bearing whole programme of study (such as a BA or MSc), focused on learning for entrepreneurship, with the creation of a real-life business venture as an integral part of the learning experience, on which completion of the programme is dependent.

Methodology

A systematic literature review was conducted in order to find and explore literature around VCPs. This review consisted of two phases with a formal systematic literature review followed by and supplemented by an additional, more informal resource collection process. The literature review process encompassing the two phases is summarised in Figure 1.

Academic literature published in peer-reviewed journals up to April 2019 was collected (Step 2) through a systematic search of an extensive range of databases including ProQuest, Emerald, and Science Direct (as used by Pittaway and Cope, 2007 and Nabi et al., 2017). No date or ABS star rating restrictions were used in order to capture as much potentially relevant literature

as possible; news articles, patents, and book reviews were excluded, however. Articles that were published in a language other than English were assessed using an online translation tool.

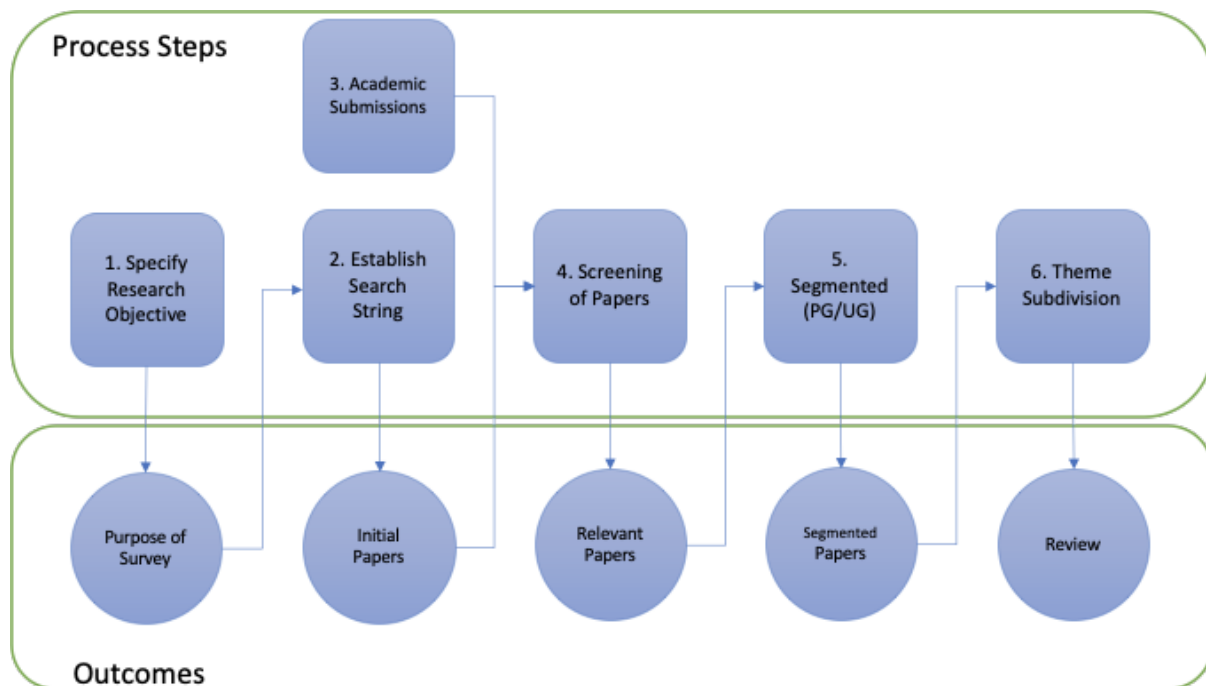


Figure 1: Literature Review Process

In the first search, search terms relating to venture creation programmes were entered, namely “venture creation program” and “venture creation programme” in singular and plural forms. The search initially produced 45 returns. After screening (Step 4) 11 of these returns met the full VCP criteria with 1 relating to a UG programme, 9 relating to PG programmes, and 1 comparing a mixture of UG and PG programmes. The UG programme article was published as a conference proceeding; all PG programme articles were published in peer-reviewed journals.

No literature exploring the Team Academy VCP approach was returned in this search. A second search was therefore conducted (again at Step 2) using the search terms relating to “Team Academy” to capture literature relating to this specific model of VCP. 495 articles were initially returned. The term ‘Entrepreneurship’ was then included to focus the search in order to exclude returns relating to sports teams and general team working. The inclusion of ‘entrepreneurship’ resulted in 56 returns which were again assessed to ensure that they related to a full VCP programme of study. 7 articles met the criteria for inclusion after screening (Step 4), 6 which were focussed at UG level with 1 comparing UG and PG responses. All 7 articles were published in peer-reviewed journals.

Following this exercise, the cited and cited-by references for articles found through the systematic search were reviewed. Academic colleagues from 4 other universities (Step 3) - known to the authors through conference and VCP networks to be either working as academic practitioners or researchers in this space - were also contacted for recommendations for published literature and for information on emerging work. This led to additional resources being discovered, for example, where work had been presented at conferences without proceedings, or where publication was in progress. A further general Internet search was

conducted using the search terms above to find non-academic information, reports and literature relating to VCP practice. 23 resources were considered for entry into the review at this stage with 16 selected for final inclusion. 10 of these explored UG or a mixture of programmes and 6 PG programmes. 6 articles were published in peer reviewed journals or edited books (2 of which were at UG level) and 6 were presented to conferences (5 at UG). 3 resources were web-based (mixed level).

After screening (Step 4) to ensure that each return related to a full VCP programme of study, the literature was then segmented (Step 5) into ‘postgraduate’, ‘undergraduate’ and ‘mixed-level’ programme focused papers. This was done to facilitate a more rigorous exploration of the differing issues affecting particular levels of study and, to facilitate comparisons where appropriate.

The literature collected through the process above was organised into themes (Step 6) that were reviewed, defined, and named in order to inform the discussion below. The themes which emerged out of the analysis broadly reflect the student journey from 1) application and recruitment through 2) teaching, learning and assessment and 3) development of entrepreneurial identity; through to 4) entrepreneurial outcomes. A summary of the final set of papers against the themes identified is provided in Table 1.

Findings

This section of the paper analyses the published and emergent literature relating to VCPs listed in Table 1. Four themes have been identified from the literature review covering the entire student journey and will be explored here: 1) application and recruitment; 2) teaching, learning and assessment; 3) development of entrepreneurial identity; and 4) entrepreneurial outcomes.

Location of VCP Studied

The majority of VCPs explored in the articles found in the review were based in Europe with the UK and Finland predominating at UG level, and Sweden and Norway at PG (Table 1). Other European countries were Belgium, France, Hungary, and Portugal. VCPs based in the US were studied by one paper only. The geographical location of the VCP(s) studied was not given in three papers although, from the authors and description of the institution, a European university might be assumed in at least two of these. A further three papers were described as exploring a VCP from a European university without mention of a specific location. This demonstrates that the vast majority of research articles in the VCP space explore programmes based in Europe and the results below should be read in this context. It is not clear if this pattern is a result of VCPs being more common in Europe, or because VCPs in other geographical locations are not being studied for research purposes. Another potential reason for this gap is that the search terms used did not find relevant articles due to differences in the language used to describe the programmes presented. A VCP Forum, led by the Centre for Engaged Education through Entrepreneurship in Norway, has however identified 40 VCPs or VCP-like programmes globally (Engage, n.d.), suggesting that the research reviewed here has good coverage of the full VCP offering.

Of particular note is the absence of US-based, full VCPs from the articles collected for review. US university-provided venture creation initiatives are included in one paper (Lackéus and Williams Middleton, 2015) alongside other full, whole programme VCPs, but appear to be adjunct, interdisciplinary programmes aimed at MBA and PhD students, rather than whole and distinct credit-bearing programmes of study. Such initiatives are important to the wider student venture creation literature but are not considered within the scope of this review.

Table 1: Literature collected through the formal and informal literature review process

Theme	Primary search term	Level of Study	Article	VCP Location
Application and recruitment	VCP	UG	Adams <i>et al.</i> (2017) ^{3B}	UK
			Smith and Shaw (2018) ^{3B}	UK
	Team Academy	UG	Pugalis <i>et al.</i> (2015) ^{1A}	UK
			Mixed	Kapasi and Grekova (2017) ^{1A}
Teaching, learning and assessment	VCP	UG	Adams (2016) ^{3B}	UK
			Blackwood <i>et al.</i> (2015) ^{1B}	UK
			Csapó <i>et al.</i> (2013) ^{1A}	Other European
			Chang, Rosili and Jackson (2019) ^{3A}	Not Given
			Heikkinen (2014) ^{1A}	Finland
			Lockyer and Adams (2014) ^{3B}	UK
			Moreland and Thompson (2016) ^{2B}	UK
			Smith and Shaw (2018)	
		PGT	Agogué <i>et al.</i> (2015) ^{1A}	Sweden
			Johannisson (2016) ^{1A}	Sweden
			Lackéus and Williams Middleton (2015) ^{1A}	UK, Sweden, Norway Other European, US
			Lackéus and Williams Middleton (2018) ^{2B}	Sweden
			Lackéus (2014) ^{1A}	Sweden
			Paço <i>et al.</i> (2017) ^{1A}	Sweden, Other European
			Haneberg <i>et al.</i> (2016) ^{3B}	Norway
Ollila and Williams Middleton (2011) ^{1B}	Sweden			
Sæter <i>et al.</i> (2018) ^{3B}	Other European			

			Schieb-Bienfait (2004) ^{1A} Williams Middleton and Donnellon (2014) ^{1A}	Other European European
	Team Academy	UG	Belet (2012) ^{1A} Belet (2013) ^{1A} Davey (2018a) ^{4B} Pugalis <i>et al.</i> (2015) Tosey <i>et al.</i> (2015) ^{1A}	Finland Finland Finland Finland
Development of entrepreneurial identity	VCP	UG	Blackwood <i>et al.</i> (2015)	
		PGT	Donnellon <i>et al.</i> (2014) ^{1A} Haneberg <i>et al.</i> (2018) ^{1A} Lundqvist <i>et al.</i> (2015) ^{1B} Williams Middleton and Nowell (2018) ^{1A}	European Norway Not Given Not Given
	Team Academy	UG	Forbes-Simpson (2018) ^{3B}	UK
Entrepreneurial outcomes	VCP	UG	Moreland and Thompson (2016) Smith and Shaw (2018)	
		PGT	Lackéus and Williams Middleton (2015)	
	Team Academy	UG	Belet (2013) Davey (2018b)	
		Mixed	Tiimikatemia (2019) ^{4B}	Finland

Resources are marked on first inclusion in the table as:

1 journal article; 2 book chapter; 3 conference paper; or 4 web-based;

A collected in Step 2; B collected in Step 3

Application and Recruitment

Potential Applicants

Kapasi and Grekova (2017) investigated the perceptions of Business School students on proposals for new Team Academy-based VCPs at UG and PG levels at a UK University. Participants were generally positive about the potential of learning by doing. This was perceived to make learning more effective and memorable with the potential to aid the drawing of connections between theory and practice. In contrast, however, participants reported that there was risk associated with this type of learning, with concerns raised about the need for students to take responsibility for their own learning and to be self-disciplined. Participants reported that they did not want to distance themselves from the knowledge they would gain through 'traditional' learning approaches. This latter finding was particularly seen in UG participants who suggested that they would like to achieve their degree goals before pursuing VCP-type learning; this may be related to considerations of employment outcomes and concerns about how employers may view a VCP-type degree. An additional finding of interest here is that students expressed concern about the value of paying to attend a university if learning is to be driven by the individual rather than the institution. Kapasi and Grekova (2018) stress the need to clearly communicate the value - particularly that relating to employability - of experiential entrepreneurship education learning, with reference to the level of responsibility and the practical experience gained.

Applications for VCPs

Smith and Shaw (2018) explored the reason for actual VCP application through interviews with students on three UK-based UG VCPs. Perhaps not surprisingly, many of the participants stated that they applied for a VCP because of having a desire to set up and/or run a business. For some participants, business start-up was explicitly coupled with the desire to obtain a degree or with skills development. Comparable results were found for first year students on a fourth VCP based on the Team Academy model in addition to perceived novelty, innovativeness, and entrepreneurship-specific pedagogy (Pugalis *et al.*, 2015). Pugalis *et al.* (2015) further suggested that VCP learning-by-doing programmes may attract those who feel they lack sufficient experience, or those who feel too young, to start a business straight out of school. Both Smith and Shaw (2018) and Pugalis *et al.* (2015) provide evidence that VCPs attract those who might not otherwise have chosen to go into higher education, or who were not enthusiastic about more traditional courses.

Of particular note in Smith and Shaw (2018) is that, even for VCP students who are more likely to have sought out a degree with a practical business start-up element, UG VCPs were generally not known about prior to application, nor easily discoverable. Participants reported finding VCP-type degrees through serendipity and chance, rather than through planned search activity.

Recruitment onto UG VCPs has also been explored in the context of gender. Adams *et al.* (2017) found that VCPs had reported an increase in applications from women. However, women still accounted for a smaller proportion within student cohorts than men when compared with the population of practising entrepreneurs. Other areas of diversification, such as ethnicity, do not appear to have been explored in the literature. This leads to the questions of whether the applicant pools and enrolling student cohorts reflect the diversity of practising

entrepreneurs and/or enterprising employees, and indeed, whether this is desirable or necessary.

Expectations and the Reality of Study

Once students are studying for a VCP, there is evidence of a mismatch between initial expectations and actual experience of the degree format (Smith and Shaw, 2018). The main point of departure would appear to emerge from the marketing emphasis of the practical elements of VCPs. Students reported that the VCPs they were studying on were less practical than they expected them to be. From a provider point of view, VCPs do include a more practical focus than traditional business-related degrees and the focus on practice is arguably justified (Morland and Thompson, 2016). There may be a gap, however, between the ways in which providers, applicants, and students perceive and interpret the course and the terms used to promote it. More research is needed to explore the language required to best describe the VCP experience and manage student and provide expectations of the offer, and to explore if more potential applicants would seek out and choose to study on VCP-type degrees if there was a greater awareness of such degrees, their 'pracademic' nature, and their focus on venture creation as a vehicle for learning. Could the size and number of UG VCPs increase as a result of greater exposure and knowledge of the VCP offer?

Smith and Shaw's (2018) results appear to reflect those of Blackwood *et al.* (2015) reported above, in that respondents only considered the formal elements of the programme when asked about meeting of expectations and did not include the highly practical informal and extra-curricular learning opportunities that were part of a wider package of VCP support, despite such opportunities being considered positively in responses to other questions. This provides additional support for the recommendation made above that future research protocols need to consider how research participants might interpret terms used relating to 'learning' in order to avoid ambiguity in responding and in the interpretation of the responses made.

Although the research presented above provides insights into the recruitment and application process at the UG level, more research is particularly needed at the PG level where the application choices of current or potential students have not been explored.

Teaching, Learning and Assessment

Teaching Philosophies

Work on active learning and experiential learning with specific reference to UG VCPs has been conducted, albeit in limited quantities. For example, Belet (2012, 2013) describes how the Team Academy's educational approach, based on team learning, coaching, and working on real business issues, can develop leadership competencies in young students. Heikkinen (2003) discusses the development of qualities such as courage, visionary skills, action orientation, and self-confidence which they state must be learned through experience rather than taught through traditional methods.

Morland and Thompson (2016) presented reflections of educators on an UG VCP in the UK, exploring its philosophy, design, and delivery mechanisms. They reasoned that experiential learning must be embedded within an action learning framework, encapsulating live issues and personal goal setting, in order to support effectual entrepreneurship and sense-making by the students. Learning 'about' entrepreneurship is not sufficient (Adams, 2016). Morland and

Thompson (2016) mirror suggestions made for general experiential learning opportunities in that ‘doing’ or ‘taking action’ on its own does not necessarily result in learning (Hägg and Kurczewska, 2016). This is because it is hard to extract exactly which action resulted in which output from within a complex learning process and there may be a misunderstanding between action and experience without meaningful interpretation, analysis, and reflection. Although not writing about VCPs specifically, Hägg and Kurczewska (2016) suggest that entrepreneurial action provides the contents of experience whilst reflection converts the experiences undertaken into learning and ensures its quality (see also Rae, 2009; Neck and Green, 2011; Higgins *et al.*, 2013 for general commentary on reflection in learning).

Commentary on PG level programmes suggests that reflection should also explore learning from available theories in the field (Paço *et al.*, 2017). Reflection is a skill that needs to be exercised and developed, however. As Rae (2009) states: “activist [student] entrepreneurs acting on their own are less likely to practice reflection unprompted” (p.295). VCPs therefore should stimulate students to act in an entrepreneurial way, encourage the collection of meaningful experiences, self awareness and develop the ability to reflect on them in relation to conceptual knowledge as Hägg and Kurczewska (2016) suggest. This is seen in the VCP literature where reflection and emotion are reported as important aspects of the learning experience (e.g. Ollila and Williams Middleton, 2011; Lackéus, 2014; Lackéus and Williams Middleton, 2015; Pugalis *et al.*, 2015; Johannisson, 2016; Paço *et al.*, 2017; Lackéus and Williams Middleton, 2018; Smith and Shaw, 2018; Hägg, 2021). Support for educator development should be explored further as the competencies and mentality required to coach and encourage reflective practice is different to that required in more traditional teaching practice (Schieb-Bienfait, 2004; Csapó *et al.*, 2013).

The role of emotions in learning in PG VCPs was further explored by Sæter *et al.* (2018) who determined that active learning processes centred on the development of real ventures triggered ‘entrepreneurial passion’ and that, in turn, this passion was reflexively responsible for further engagement with the course; they also noted that VCPs developed students’ resilience through team working and the experience of ‘critical’ situations in the development and management of their venture. Additional work by Lackéus and Williams Middleton (2018) and Lackéus (2014) has explored emotion in assessment based on their experience of delivering the Chalmers University of Technology PG VCP. Here, they synthesised a model to describe how both the assessment of learning (by the teacher) and the assessment of value (by an external stakeholder) can be combined to assess the students’ development. The model focuses on ‘emotion laden activities’ as the vehicle through which both forms of assessment can be facilitated. Lackéus and Williams Middleton argue that the model represents a new way of conceptualising assessment in experiential education. They also recognise the challenges of applying this kind of measurement and propose a ‘third-space’ strategy which focuses on the creation of hybrid forms of learning and assessment supported by detailed rules of engagement and designated spaces as a means of developing experiential learning and assessment.

Learning Environment

Tosey *et al.* (2015) undertook an exploratory case study analysis of a Team Academy VCP through a 3-day ‘Learning Expedition’ hosted by students and staff at JAMK University. They concluded that Team Academy is an example of a ‘micro-culture’ - an artificially created learning environment with a local context in which pedagogical and cultural practices coalesce. Within such a micro-culture, curricula, and pedagogical practices (e.g., methods of teaching, learning and assessment) function both to pursue explicit educational objectives and to promote

or sustain the micro-culture. Four important attributes of learning environments are involved and can be seen in educational models such as Team Academy: social embeddedness, real-worldness, identity formation, and normative (having an ideological dimension). Chang *et al.* (2019) explored reflective logs kept by students on a UK-based UG VCP. They argued that it is important to develop a 'practice site' or 'microcosm' that mimics the environment in which entrepreneurs practice. This leads to a potentially interesting set of questions for future research: what are the necessary conditions for creating a 'micro-culture' or 'microcosm' and are VCPs more likely to result in micro-culture creation than more traditional business-related degrees?

Tensions between these more effectual forms of learning which VCPs apply (e.g., Agogué, *et al.*, 2015) and the causal forms of education which tend, more generally, to be applied in business schools (Sarasvathy, 2001) has also been an area of exploration for some researchers. Work by Lockyer and Adams (2014) suggests that both effectual and causal approaches need to be applied to give UG students the optimum learning experience in any context. They also posit the idea that VCPs, more so than other types of courses, could play an important role in developing innovative approaches to teaching and learning as they present an ideal environment in which to experiment with new techniques and a frequent need to blend both approaches. Haneberg *et al.* (2016) and Williams Middleton and Donnellon (2014) writing with particular reference to the PG experience, suggests however that while such experiences can be highly beneficial, supporting them is resource intensive and risky for institutions; these may be key factors in the limited growth of action-based programmes such as VCPs.

Blackwood *et al.* (2015) explored the ways in which participants experienced and articulated their own learning and development during the first year of a three-year Team Academy-based programme in the UK. Increases in self-efficacy and confidence were reported along with the acquisition of competencies associated with entrepreneurship and the disposition towards entrepreneurial activity. Increased understanding of team dynamics and interactions with colleagues, customers, and collaborators was also described. Interestingly, the participants struggled at first to articulate what they had 'learned,' assuming that the question referred to formal timetabled sessions only. Much of the learning in VCPs, however, occurs in informal settings and through self-directed activities, with informal opportunities as important to learning as the formal and more traditional (Pugalis *et al.*, 2015). The development of future research protocols should take the potential for misunderstanding of terms relating to types and places of learning into account. Further research is also needed to explore differences in the effectiveness of formal timetabled and informal self-initiated learning opportunities. Do, or how do, students understand and make linkages between the various forms of learning expected of them during their VCP study?

Assessment of Learning

Assessment in VCPs has received some attention, although this has mainly been through descriptions of the types of assessment used within programmes (Morland and Thompson, 2016; Davey, 2018a). Pugalis *et al.* (2015) in particular stresses that the commercial success of activity is not part of an assessment framework for the VCP they explored. Literature exploring assessment decisions and outcomes in detail is extremely limited, however, echoing the findings of Pittaway and Edwards (2012) for assessment in general entrepreneurship education. For example, Belet (2013) makes the interesting suggestion that the strong empowerment of student team members in the Team Academy model largely removes problems with discipline and grading, however, more detail, context, and evidence is required to explore why this might

be the case. The particular complexity of developing an evidence base for assessment within VCPs may be explained by the difficulty in deciding how to assess both the venture and the nature of student learning, particularly as teaching approaches are developed before research can underpin their effectiveness (Williams Middleton and Aaboen, 2018; Haneberg *et al.*, 2019). There is also a lack of discussion of learning outcomes for VCPs. What are the desired or expected learning outcomes for VCPs at UG and PG levels? How do these differ from traditional business-related degree courses? This is of interest in its own right, but is also needed in discussions about assessment design in order to explore the efficacy and appropriateness of the assessment process.

Technology Transfer

A series of research papers from Chalmers University of Technology explored the utilisation of a specific PG-level VCP programme offered by the institution as a mechanism for university entrepreneurship (e.g., Ollila and Williams Middleton, 2011; Agogué *et al.*; 2015; Johannisson, 2016; Lackéus and Williams Middleton, 2018). The course at Chalmers combines an educational programme with incubation where students on the programme are aligned with technology-based ideas with the purpose of the ideas being developed into ventures in which the students have an ownership stake. Following a review of the initiative, Ollila and Williams Middleton (2011) proposed that VCPs should be designed around key themes including a focus on reflection-in-action, an emphasis on value creation (see also Lackéus *et al.*, 2016), and an environment where mistakes are encouraged.

Further work by Lackéus and Williams Middleton (2015) explored how 9 different PG venture creation initiatives delivered by institutions in Europe and America (a mixture of full VCPs and adjunct programmes) might bridge the gap between entrepreneurship education and technology transfer within the University environment. An additional UK-based UG VCP programme was included in the study, but was an exception with no reported technology transfer partner. From this work the authors arrived at three key conclusions: firstly, the importance of experiential learning was stressed as a key contribution to learning and technology transfer; secondly, the authors noted that negative experiences may trigger transformative learning leading to profound changes in self; and, finally, perceived ownership of the venture being created, both contractually and emotionally was seen as important in achieving the commitment and dedication needed for students to start their venture. The importance of 'ownership' was also highlighted by Haneberg *et al.* (2018) who found that students on a PG VCP offered by the Norwegian University for Science and Technology (NTNU) who experienced a small degree of ownership of a start-up project were more focussed on academic results and were less likely to play an active role within an entrepreneurial team. It is worth noting that most of the PG level VCPs explored have an emphasis on technology transfer (see Paço *et al.*, 2017 for a further example); this is not seen in UG VCP literature.

The research presented above raises questions and future research challenges in relation to the UG VCP context where equivalent research is lacking. It would appear that PG VCPs and VCP-like learning opportunities are based on the premise that the businesses being created are technology-based and may require input and support from institutional technology transfer units as a result. The one UG VCP included in the study by Lackéus and Williams Middleton (2015) did not have a technology focus, and subsequent informal discussions with UK-based UG VCPs conducted by the authors of this paper suggest that a lack of technology emphasis is common at this level. Formal research is needed to confirm and question what types of businesses (e.g., sector, technology focus, growth potential, etc.) could or should be expected

from UG VCPs given the age and life/business experience of students compared with those studying on PG VCPs.

Development of Entrepreneurial Identity

Research by Lundqvist *et al.* (2015) found that entrepreneurial identity of PG VCP students is developed as individuals both interact with value creation and are affected by their entrepreneurial role expectations in their immediate team environment. Similar findings by Donnellon *et al.* (2014) lead them to propose that where an action-based, learning ‘through’ entrepreneurship approach is used, the identity construction of the individual and the venture are often intertwined.

According to Donnellon *et al.* (2014) it is inevitable that PG VCP students take on a new identity related to that of an entrepreneur to some extent when they act as entrepreneurs during their studies. Indeed, several researchers have argued that identity formation may be just as important in entrepreneurship education as pedagogy, content, knowledge, and skills (Donnellon *et al.*, 2014; see also Hytti and Heinonen, 2013; Williams Middleton, 2013; Nielson and Gartner, 2017 for related non-VCP specific research). Taking on the identity of an entrepreneur can be challenging, particularly when engaging with established social groups and in relation to how the new identity fits with existing identities and roles (Williams Middleton, 2013). Issues may also arise with the development of dual identities for PG VCP participants who are both students and nascent entrepreneurs (Haneberg *et al.*, 2018).

An interesting finding from Blackwood *et al.* (2015) involved the evolution of identities of first year UG VCP research students. Here, critical self-reflection resulted in students refining their understanding of their previous entrepreneurial activities and separating out money-making activities from those leading to genuine business start-up. Some of the research participants struggled to self-identify as an ‘entrepreneur’ as a result. The authors described how initially held narratives of entrepreneurship, particularly those stressing the role of dominant individuals, were challenged through discovery of the importance of teamwork. The relationships between trust, control, and the development of entrepreneurial teams within a PG VCP was further explored by Williams Middleton and Nowell (2018) who suggested that teams of nascent entrepreneurs on the programme shared some characteristics with other successful types of teams such as family-based businesses.

Further research could usefully explore diverse types of entrepreneurial identity constructed during a VCP, their relationship to gender (following findings by Hytti and Heinonen, 2013, of gender differences in entrepreneurial identity in non-VCP students), types of entrepreneurship aspirations, and whether types of identities change over time or with engagement with specific elements of the programme, such as teamwork. It would also be interesting to explore if and how dual identities of ‘student’ and ‘entrepreneur’ emerge and interact given the ‘pracademic’ emphasis of VCPs. For example, does one or other identity take precedence at certain points in the learning journey? Emerging work currently being conducted on the same UG programme explored by Blackwood *et al.* (2015) may begin to help here (Forbes-Simpson, 2018).

Entrepreneurial Outcomes

It has been suggested that the best way to evaluate entrepreneurship education is to relate programme outcomes directly to start-up objectives. For new business creation courses, including VCPs, such objectives could be primarily economic and include measures such as businesses started or saved, revenue generation and growth, job creation and retention,

financing obtained and profitability (Storey, 2000; McMullan *et al.*, 2001; Henry *et al.*, 2004). Fayolle *et al.* (2006) argue however that venture creation cannot possibly be measured during or immediately after any type of education programme, since the venture creation process usually takes time. They note the work of Hytti and Kuopusjärvi, (2004) who state that the more delayed the measurement, the harder it is to isolate the role played by a single factor (e.g., the programme) regarding its impact on a specific outcome (e.g., venture creation activity). The ability of universities to track graduate entrepreneurial outcomes after graduation is also restricted (Smith, 2015).

Although Fayolle (2013) argues that the goal of entrepreneurship education is not necessarily that all participants will create a business in the short-term, actual start-up is a potential outcome of VCPs where active exploration of the venture creation process is required. This is not the only outcome of value, however. Indeed, as Morland and Thompson (2016) state, VCPs provide a 'learning to learn' opportunity through which students come to realise what is involved with job and business creation and whether they are suited to pursue this route. By the end of their programme, not all students will have started-up or want to start-up and this should not be seen as a criticism. Despite this caveat, actual business start-up is reported within-course in the VCP literature at both UG (Morland and Thompson, 2016; Davey, 2018b; Smith and Shaw, 2018) and PG levels (Lackéus and Williams Middleton, 2015). According to statistics published on the JAMK University Team Academy website, 37% of students became entrepreneurs 6 months after graduation, and 47% after 2 years (Tiimikatemia, 2019). Belet (2013) reports a 37% 'entrepreneurship level' of Team Academy graduates in Finland compared with a national average rate for graduates of 2.5%.

In common with other types of entrepreneurial education initiatives, the longer-term start-up or growth intentions or actions of VCP programme graduates are generally not explored. More research is needed to identify appropriate measures to assess the impact of VCPs and explore over what timescale(s) such impact can be reasonably measured. In particular, will the real-life business-related knowledge and skills obtained through a VCP experience lead to improved graduate employment outcomes as 'entrepreneurial employees,' act as a gateway into further start-ups with greater growth potential, or improve the probability of long-term business sustainability?

VCPs have been described as 'pracademic' (e.g., Morland and Thompson, 2016) with equal emphasis on practical and academic outcomes. One study by Smith and Shaw (2018) reported dual drivers for students on VCP programmes towards a) business start-up and b) obtaining a degree. The two drivers were present from application and remained to near graduation although the balance between them shifted over time with one element receiving more of a focus than the other depending on individual needs and timing of academic or business-related pressures. Smith and Shaw's (2018) respondents reported that although course requirements can put back business progress at some points, the rigour of assessment deadlines pushed the business forward at other times and helped them overcome the barriers they faced. These findings resonate with results obtained by Ollila and Williams Middleton (2011) at PG level where students came to appreciate the value of the assignments as contributing towards the development of their business venture. Further research is needed to explore the balance between learning outcomes and entrepreneurial objectives when measuring the impact of VCPs. Future research projects could also explore how students manage the balance between learning and business start-up requirements of VCPs, and how VCPs prepare and support students for and through the necessary entrepreneurial and academic pressure points.

Discussion and Implications

Implications for Policy Makers and Entrepreneurship Educators

The suite of research presented above suggests that ‘full’ VCPs - credit-bearing whole programmes of study - may help meet the calls of numerous policy makers and scholars to provide an innovative curriculum based on experiential learning principles. There is evidence that they can provide a positive learning experience (Blackwood *et al.*, 2015; Pugalis *et al.*, 2015; Tosey *et al.*, 2015; Smith and Shaw, 2018) in addition to leading to actual business start-up during the degree or after graduation (Davey, 2018b; Smith and Shaw, 2018). Despite this, VCPs, particularly at the UG level, are rare and niche (Adams *et al.*, 2016; Morland and Thompson, 2016) with only 40 VCP programmes globally currently identified by Engage (n.d.). It should be noted, however, that the vast majority of the literature collected for this study explored European-based VCPs and more research is needed beyond the European context.

We have explicitly focused on full, whole programme, curriculum-based VCPs, but the review has implications for enterprise educators beyond such VCPs with relevance to other types of entrepreneurship education programmes, particularly in relation to the inclusion of experiential learning and reflection which can be incorporated into smaller learning opportunities within modules, or within extra-curricular support for student entrepreneurship. The work of Donnellon *et al.* (2014) and Blackwood *et al.* (2015) may be useful here in debates about the use of such learning opportunities in the development of an entrepreneurial identity. A comparison of the outcomes of full VCPs with shorter ‘mini’ offers would be useful here.

Further challenges and suggestions for future research were highlighted throughout the Findings section above, relating to the role of experiential learning and emotion; teaching, learning and assessment practice and use of underpinning theories; the need to identify and measure appropriate learning and entrepreneurial outcomes; the development of entrepreneurial (and student) identities; and issues around marketing VCP programmes for application, recruitment, and the meeting of stakeholder expectations. Of particular note here, perhaps, is the lack of information and discussion relating to the institutional and student context and learning outcomes of VCPs which would be helpful to those looking to propose and design a new programme.

There is also a need to conduct further research in order to explicitly explore linkages to wider policy needs and drives. For example, if VCPs have the potential to enhance learning, address policy calls, and contribute to economic growth as suggested above, why are there so few known VCPs at universities around the world in comparison to more traditional business management-type programmes? Why have only around 40 VCPs been identified by Engage (n.d.)?

Although not reflected in the literature, there is also anecdotal evidence that a number of VCPs have closed after a relatively short length of time, at least in the UK. New VCPs appear to have emerged recently to take their place (see Akademia, n.d., for a list of current UK Team Academy programmes, for example), but it remains of particular concern that several VCPs closed or are in abeyance a short time after initial launch. What factors allow some VCPs to become sustainable, and others not, and what additional policy drives or evidence would be required to encourage VCP programme development and senior management support for their creation and sustainability?

McDonaldisation of Higher Education

Perhaps one of the reasons for the rarity of VCPs is the challenge they face to the four components of university McDonaldisation proposed by Ritzer (efficiency, calculability, predictability and control; Ritzer, 1993) compared with more traditional entrepreneurship education offers. VCPs are not efficient with small student cohorts (Smith and Shaw, 2018) and the high relative amount of staff time required to provide individualised support to the proposed venture creation projects. This can be seen within the Team Academy model where formal lectures providing potential economies of scale are replaced by coaching activity and the development of individualised learning contracts (Belet, 2013), for example. VCPs can potentially offer calculable outputs towards university mission and quality indicators relating to employability and knowledge exchange activity (Smith, 2015), but these may not be key measures sought by senior managers when assessing the feasibility of programme offers.

With small student cohorts, benefits of VCPs are likely to be indirect, rather than directly generated by student fee income; quantity does not necessarily equal quality here. The VCP offer is not yet predictable as demonstrated by the lack of student knowledge and understanding of what they entail (Kapasi and Grekova, 2018; Smith and Shaw, 2018) and we are still to understand what particular skills and attributes of course developers, course leaders, and educators are necessary for sustained and ongoing development of VCPs. An understanding of the latter will be required if there is deemed a need to exert control and standardisation of educators and other forms of new venture support within the VCP experience. McDonaldisation may not always be desirable, however, and its increasing presence in entrepreneurship education through the adoption of highly standardised practices such as competitions and pitching exercises has been criticised for a lack of criticality and diversity (Hytti, 2018).

Differences Between Undergraduate and Postgraduate Level VCPs

A key decision was made prior to the analysis to compare and contrast literature for UG and PG programmes. Although there is much overlap in the literature presented for UG and PG VCPs, there are several key differences.

First, PG VCP programmes show a strong relationship with a university technology transfer office, reflecting an emphasis on knowledge exchange and exploitation of research. This is not seen in the UG VCP literature. The reason for this is not clear. It may reflect that PG students are generally older with more social and financial capital, more advanced in their studies, or may have more real-life work experience to inform and inspire new venture ideas, but is this necessarily the case and could more high-tech businesses be stimulated within UG programmes if additional support is provided? Further exploration is necessary as this may have implications for the need to involve wider specialist institutional support when designing, setting up and evaluating the outcomes of UG VCPs, particularly where senior managers may be expecting high-tech entrepreneurship outcomes in order to help address institutional strategies or local or national Government policy needs.

Second, it is particularly noticeable that the Team Academy model does not feature in PG research literature presented here. Further exploration is again needed to explore why this is the case, but may reflect the number of full PG programmes based on the Team Academy model relative to UG programmes, and the additional challenges required to meet academic

requirements for accreditation of programmes in the move away from lectures to coaching-focussed learning opportunities and use of learning contracts.

Conclusion

The systematic literature review presented above confirms that VCP programmes are a distinct form of in-curricular enterprise creation degree course which explicitly bases learning opportunities on the ongoing creation of a real-life venture (Lackéus and Williams Middleton, 2011), providing a different model to teach entrepreneurship compared with the passive learning and traditional lecture-style delivery described by Jones and English (2004). VCPs match Rasmussen and Sørheim (2006)'s action-based strategy for entrepreneurship education with a coupling of students with ideas that they own, With a strong emphasis on reflection, experiential learning, and development of entrepreneurial practice, they can be seen as a form of new enterprise creation course, designed to develop the competencies that lead to self-employment, economic self-sufficiency or employment generation recommended by Kirby (2004), with evidence of positive personal outcomes (such as the development of an entrepreneurial identity) and entrepreneurial outcomes (such as actual business start-up). More research is needed however, as discussed above, to fully understand the costs and benefits of such programmes for students at each level of study, educators, institutions, and the economies in which they sit.

We would like to propose a concluding series of related research challenges as a result of this work. It is noticeable that much of the literature presented here is based on a small number of VCP programmes. It is also of potential concern that a sizable proportion of the work presented in this chapter is taken from conference proceedings and web resources rather than more formally published work in peer-reviewed journal articles. There may be a number of factors unpinning these observations. VCPs tend to enrol small numbers of students and the numbers of programmes themselves are small. Small cohort studies may lead to issues with meeting the academic rigour required for journal publication, and concentration on a single-institution studies may curtail the researcher's ability to show that research results are replicable and generalisable across programmes. It may also be the case that some of those undertaking research into VCPs are relatively young in their academic careers and need support to move from conference to journal publication, or that work presented at conferences is still at an early stage of development and will be submitted for publication in due course. We are aware, for example, of one conference paper included in the systematic review by Sæter *et al.*, 2018 subsequently being published as a chapter in an edited book (Neergård *et al.*, 2022).

The final challenges presented here are therefore as follows: how can research into this area of investigation be encouraged and supported by more established entrepreneurship education and general nascent entrepreneur research communities; how can the VCP community reach out to each other as potential subjects of research and as contributors to multi-institution research projects; and how can the results of research into UG VCPs be made more visible to key stakeholders such as the senior managers of HEIs who make decisions about programme creation and sustainability?

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