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Feedback and assessment in higher-education, practice-based entrepreneurship courses: How can we build legitimacy?

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Abstract:

When educators teach entrepreneurship experientially in higher education, a need arises for different procedures for assessment, evaluation and feedback, and the legitimacy of this type of course is often questioned. In traditional courses, students accumulate knowledge and the educator's primary concern is *what* students learn. When learning 'through' practising entrepreneurship, students and educators must also care about *how* students learn. While research brought awareness to this area of concern more than a decade ago, feedback and assessment in entrepreneurship education have received very

limited attention. This paper addresses these issues both theoretically and empirically. The findings allow the authors to map out the feedback mechanisms needed in experimental entrepreneurship education and to provide an embedded, two-by-two model that describes the purpose and outcome of the feedback. The findings also suggest an approach for design and assessment that may help resolve the pedagogical and legitimacy challenges of such courses. These contributions are directly relevant for students, educators and administrators involved with entrepreneurship courses, and they may be applicable to a wider range of process-based courses.

Keywords:
Entrepreneurial learning, feedback, assessment, experiential learning, legitimacy, course design

Although entrepreneurship education had grown rapidly and was popular by the turn of the century (Dana, 2001; Vesper and Gartner, 1997), this development was not an indication of maturity and agreement about what it was or should be. There was concern (Fiet, 2001) that there was 'little uniformity in content and approach among courses' (Falkäng and Alberti, 2000, p. 102). At that time, Levie (1999) surveyed entrepreneurship education in higher education (HE) in England and identified two main types of courses: courses *for* entrepreneurship and courses *about* entrepreneurship. He found that 'Courses *about* entrepreneurship tended to be taught in a traditional manner' (Levie, 1999, p. 4), which Laukkanen (2000, p. 27) described as 'detached' and 'as a social phenomenon

among others'. By 2005 the 'for' type of course concept had been further refined, and Hannon noted that a 'commonly applied conceptualization of entrepreneurship education is presented as being 'about', 'for' or 'through' entrepreneurship' (Hannon, 2005, p. 108). Here, 'for' courses aim at training and preparing students for future entrepreneurial practice and tend to emphasize business school skills, while 'through' courses seek to provide an educational setting where students learn through an entrepreneurial process by working on their own entrepreneurial project and engaging with the real world (Blenker et al., 2011; Gibb, 2011; Mwasalwiba, 2010; Pittaway and Cope, 2007).

Many entrepreneurship education researchers recommend that educators consider incorporating experiential processes of learning 'through' entrepreneurship into their curriculum (Cornwall et al., 2015; Hannon, 2005; Ollila and Williams-Middleton, 2011; Pittaway and Edwards, 2012; Rae, 2010). However, implementing these recommendations and learning philosophies in entrepreneurship courses present a number of potential challenges – pedagogical (Scott et al., 2016), institutional and legitimacy-related (Blackwood et al., 2015; Katz, 2008; Warhuus and Basaiawmoit, 2014). Educators may not be cognizant of these challenges and, if they are, may not have the means or willingness to overcome them (Garavan and O'Cinneide, 1994; Scott et al., 2016), potentially resulting in fewer through-type courses despite their perceived effectiveness (Pittaway and Edwards, 2012).

In this paper we address the particular needs that arise for assessment, evaluation and feedback procedures in through-type HE entrepreneurship courses. We do so because those applied to traditional forms of HE often come up short in experiential-based 'through' learning situations. Among the first researchers to acknowledge this issue were

Gibb (2002a) and Hannon et al. (2005), who label this problem as a 'key challenge' for HE institutions. In this context, research suggests that educators' concern is no longer solely *what* students learn, but also *how* they learn (Blenker, 2015; Carey and Matlay, 2010; Löbler, 2006). This shift in the type of learning that takes place in through-type courses has widespread consequences for how, what and when educators need to evaluate and provide feedback. While we concur with the view that there is 'some anxiety about how to assess business ideas' (Carey and Matlay, 2011, p. 444), we believe that this may be a misguided direction for entrepreneurship education assessment research. In our experience, this is a challenge for course design and a source of confusion, in some cases frustration, for teachers *and* students during delivery and in the evaluation of student performance in a HE system. To further understand and address these challenges, we set out to investigate: (1) what we could learn from the literature; and 2) what we could learn from our own multiyear experimentation with practice-based course design and feedback, in order to better understand how feedback is and should be used in practice-based entrepreneurship education – and the consequences for course design.

The purpose of this paper is to explore, understand and develop feedback and assessment mechanisms for process-based, 'learning-through' entrepreneurship courses to address the pedagogical and legitimacy challenges they pose. In these types of courses, the educator needs to construct an adequate feedback system and communicate this system to the students and to the institution. This step is essential for students because their entrepreneurial projects and learning outcomes are created and modified based on feedback throughout the entrepreneurial process. It is essential for the university because it has to approve of and function as the supplier of courses offered. Many forms of

feedback and assessment involving a wide range of individuals can be identified in entrepreneurship education (Wick et al., 2016). However, rarely do stakeholders outside the classroom influence the final grade (Pittaway and Edwards, 2012). In this paper, we focus on educator and student relationships and we develop a two-by-two matrix for feedback design that describes the purpose and outcome of feedback from: (1) student to educator; (2) student to student; (3) educator to student; and (4) educator to educator.

In doing so, we first establish an overview of how researchers describe and understand assessment and feedback in entrepreneurship education. Next, we examine research in feedback and assessment in HE in general to identify and discuss practices that might be appropriate for adoption in entrepreneurship education. Based on this review and examination, we then define 'feedback', 'assessment' and related terms to increase precision of the feedback model developed later in the paper. We conclude with a discussion of the implications for entrepreneurship education and an invitation to entrepreneurship educators and researchers to test and further develop our model.

Theoretical foundation

To substantiate our investigation, we draw on two fields of knowledge: entrepreneurship education research and general education research on assessment and feedback.

Assessment and feedback in the entrepreneurship education literature

Most papers about assessment in the entrepreneurship education literature are concerned with measuring, assessing and evaluating the post-course contribution of entrepreneurship education to society or the contribution of entrepreneurship education to students' entrepreneurial attitudes or intentions (e.g., Cornwall et al., 2015; Liñán et al., 2013; Smith, 2015). The didactic questions of how assessment and feedback are used in

entrepreneurship education have been largely ignored in the current debate. When authors write about this issue it is rarely central to the theme of their paper and is most often addressed in the conclusion or suggested as a potential topic for further research (e.g., Hannon et al., 2005; Jensen, 2014; Jones et al., 2014; Mueller and Anderson, 2014; Nielsen and Stovang, 2015; Pittaway and Edwards, 2012; Warhuus and Basaiawmoit, 2014). Typically, these contributions indicate that assessment *within* a course is important, interesting and complicated, and that it appears to impact student learning.

We were not able to find any contributions on the use of assessment and feedback with a focus on process-based, 'learning-through' entrepreneurship courses, even though researchers increasingly argue that 'through' entrepreneurship approaches are essential for learning entrepreneurship (Blenker et al., 2011; Gibb, 2002b; Hannon, 2005; Pittaway and Cope, 2007). We did identify three recent papers concerning didactic questions about assessment and feedback in entrepreneurship education. We now present and discuss these three contributions.

Pittaway et al. (2009) were pioneers in exploring and describing the practice of assessment in enterprise education in HE. As they note, even though the literature on entrepreneurship education is expanding, assessment and feedback practice in entrepreneurship and enterprise education has received very little attention (Mwasalwiba, 2010; Pittaway and Cope, 2007). Multiple interesting paradoxes emerge in their analyses of assessment practices in entrepreneurship education. In the framework of assessment in entrepreneurship education, Pittaway et al. (2009, p. 75) notice:

> Second, Brown et al. (1997) makes the point that the 'conventional ways' that are used to assess students are not as effective as educators would like. This is a consideration for

> enterprise educators because it illustrates that the practices that are generally accepted in higher education may not in fact be appropriate for testing what educators wish students to learn. It demonstrates that enterprise educators may need to be innovative when thinking about new methods of assessment, especially where the aims of the educational activity differ from the norm.

Pittaway and Edwards (2012), and most recently Scott et al. (2016) have continued this work on exploring assessment practices currently used in entrepreneurship education. Pittaway and Edwards combine different outlines of entrepreneurship education syllabi with the pedagogical framework for 'about', 'for' and 'through' learning. They observe that the assessment of skills (through business plans, presentations, etc.) is the most widely used form of assessment, making up about 50% of all assessment activities and dominating the 'for' and 'through' types of courses. Further, they find that student self-assessment (reflective assessment) is part of assessment practice in only 5% of the courses, but that the '"through" form of entrepreneurship education is far more likely to utilize reflective assessment practice' (Pittaway and Edwards, 2012, p. 789). Scott et al. (2015) describe assessment practice in entrepreneurship education through a critical lens and question whether it is possible to formulate clear learning outcomes in entrepreneurship education. The central problem discussed in these two papers is that the traditional ideal of well-defined learning goals conflicts pedagogically and ontologically with the very purpose of process-based 'through' entrepreneurship education – to set up an open learning environment where

students learn through their participation in a real and open-ended entrepreneurial process, rather than by achieving certain predetermined learning goals.

Assessment and feedback in general HE education

In her extensive literature review, Evans (2013) gives an overview of the literature on 'assessment feedback' in HE. Her main goal is to provide insight into how assessment-feedback, as an 'umbrella concept' (Evans 2013, p. 71), has been used and understood in the educational research community. Through this review she finds that different understandings of the terms used (such as feedback, peer feedback, feed-forward, feed-up, process feedback, etc.) are rooted in different ontological assumptions of learning, and that they are used in different learning situations.

Evans suggests that the feedback literature adheres to one of two approaches to understanding feedback exchanges. The first is the cognitivist approach, in which an expert (e.g., a teacher) gives feedback to another person (student, child, etc.) based on what 'is seen as corrective' (Evans, 2013, p. 71). The second is the social constructivist approach, which is facilitative in that it 'helps students to gain new understandings without dictating what those understandings will be' (Evans 2013, p. 71, referring to Archer, 2010). Hattie and Timperley (2007, p. 81) describe the cognitivist approach to assessment feedback as a '"consequence" of performance', with an expert providing feedback to evaluate a certain performance. While the expert can be any person or entity, the premise is that performance is evaluated based on a predetermined setting, norm or criterion, such as learning goals. Hattie and Timperley's (2007) description aligns well with Evans's cognitivist perspective of the term 'feedback assessment'. It is also in line with Banta and Palomba's (2015) definition (first published in 1999), according to which

'in common parlance, *assessment* as applied in education describes the measurement of what an *individual* knows and can do' (p. 1); and educators have to be 'purposeful' about the information they use for evaluation (p. 9). For both Hattie and Timperley (2007) and Banta and Palomba (2015), someone or some entity is *evaluating* and measuring someone else based on predetermined criteria.

When we view assessment feedback from a social constructivist perspective, the role of the student and expert can be much more complex and dynamic. From this perspective, both parties can be actors who are learning and co-developing through dialogue (Evans, 2013). In this view, the 'expert' may be, for example, a fellow student. Nicol et al. (2014) suggest peer review between students as one way of letting them take charge of their own development and learning, because students may learn from giving and receiving feedback from classmates. From the educator's perspective, he or she spends less time reviewing and grading when the students give feedback to each other. However, giving and receiving feedback constructively is complicated, and students need to learn how to do this for the strategy to work in practice. To this end, educators and students should, preferably, agree on a framework with roles and rules for how to give and receive peer feedback. The educator typically constructs this framework and establishes the criteria for feedback. Learning how to use the framework to give and receive feedback constructively becomes a central learning element in a course using peer review (Bager, 2008). While some authors focus on the role of feedback in a classroom setting (Nicol et al., 2014; Nicol and Macfarlane-Dick, 2006), others are concerned that this is a short-term, unbalanced perspective that relies too much on the formal educational setting (Boud and Falchikov, 2006). They see student feedback and assessment practices

as an important part of preparing their ability to communicate effectively in their careers after graduation (Boud and Falchikov, 2006; Nguyen and Walker, 2016). In this view, the focus is on learning for life rather than just for school (Löbler, 2006); students' review of their own learning or of each other's learning prepares them for future learning situations of which the outcome is yet undefined.

Even though Evans (2013) makes it clear that the social constructivist and the cognitive approaches should not be seen as opposites on a spectrum, they do have very distinct characteristics, especially in their conceptualization of the relationship between student and educator and the purpose of feedback. If we adopt the view that summative assessment is 'assessment for certification', formative assessment is 'assessment for immediate learning' and sustainable assessment is 'assessment for longer-term learning' (Boud, 2000, in Boud and Falchikov, 2006), it becomes apparent that a clear distinction between assessment and feedback is hard to maintain. In some cases, the feedback is a learning tool; in other cases, the feedback is for assessment.

However, researchers largely agree that the term 'assessment' in HE refers to the situation in which an expert is evaluating a person's performance against predefined criteria. Often the expert is the educational institution represented by educators evaluating students or an external accreditation agency evaluating the educational institution (Banta and Palomba, 2015; Banta and Associates, 2002).

There are at least two main perspectives on the nature of feedback. Researchers often refer to the first as 'assessment'. Here the term 'assessment' has a formal character that is typically based on the cognitive approach with regard to both formative and summative assessment. From this perspective, an expert is giving a person or an

institution feedback, often in the form of an evaluation of what is 'right' or 'wrong'. Typical examples are grading (where the educator assesses the student's learning outcome) and course evaluations (where the students assess the quality of the teaching or the relevance of a course). The second perspective is in line with the social constructivist approach, in which the purpose of feedback is to co-develop the participants for immediate and future learning situations. This approach is dialogue-based and has a dual purpose: (1) for student *and* educator to develop their own learning; and (2) for the adjustment of learning goals in the educational setting. As such, the focus is on learning for future development and for learning how to learn (Löbler, 2006). This is particularly intriguing in an entrepreneurship education setting where students learn 'through' the entrepreneurial process.

Education-based research: experimenting with a feedback model

In entrepreneurship education research, scholars who teach entrepreneurship often do research on themselves and their courses. This approach holds some advantages since it enables researchers to focus on activities into which they have deep personal insight from their role as educator. It also, however, poses challenges due to the convergence of researcher and research object (Blenker et al., 2014) and the 'element of self-assessment' that follows (Warhuus and Basaiawmoit, 2014, p. 329). In the following account, we rely primarily on our own courses to identify potential problems and opportunities for working with feedback and to experiment with different forms of feedback in the classroom.

During the delivery of courses, we have experienced a strong need to communicate to students how we use feedback; an issue that the literature has also

addressed (Nicol et al., 2014). This need evolved over time, as the introduction of additional types of feedback added to the complexity for everyone in the classroom, and because the students kept asking for even more feedback on their projects and learning progress. Parallel to conducting the above literature review, we experimented with feedback models in two of our courses. Both were Master's level and were based on a 'learning-through' approach: we facilitated the students through an open-ended process of entrepreneurial opportunity formation, innovative solution construction and innovative solution testing in a real-life setting (Blenker et al., 2011; Thrane et al., 2016). In this context, it was particularly important for us to create feedback practices that we, as educators, could use to adjust the teaching to accommodate the entrepreneurial projects the students were working on and which would enable meta-communication about the learning process the students were experiencing. For this purpose, we needed a model that was able to structure the different feedback elements for the students and make clear and explicit the kind of feedback we were working with at any given stage of the process.

Over the years, in our own teaching, we have developed the model in Figure 1 to communicate with students about the structure of the feedback mechanisms used on the courses. We shall now briefly describe how we have approached each of these elements.

Insert Figure 1 about here

Each arrow in Figure 1 represents a feedback situation. The top arrow, from 'educator' to 'student', indicates that, at some point, the educator evaluates the students. This is the traditional exam situation, with the educator assessing and grading students individually during and/or at the end of the course – typically based on a final essay, a project report/business plan, or a written or oral exam (Pittaway and Edwards, 2012).

This type of assessment represents a cognitivist approach whereby an expert evaluates the performance of students on what they have learned based on predefined learning goals. This can also be seen as feedback, as the resulting grade informs the student how well he or she has performed in achieving the learning goals from the perspective of the institution *and* informs the institution about how well the learning goals were taught.

The bottom arrow in Figure 1, flowing from 'student' to 'educator', represents the situation in which the student evaluates the teaching. Course evaluations are typically formal and often given as survey-based questionnaires; but they can also be informal, preferably semi-structured, dialogues between educators and students on what the students thought went well and what needed improvement. In our case, we used a semi-structured dialogue centred on two main questions: 'What is it about this course that excites you?' and 'What is it about this course that perplexes you?' This approach combines elements of assessment (in the sense that students assess the instruction) and feedback to educators (in the sense that students suggest or point towards potential areas for improvement).

Both these forms of feedback are well known and highly institutionalized in HE. They are assessments in that they evaluate what each party delivers. However, because we based our courses on a process-oriented 'learning-through' approach, we felt the need to clarify what we were doing in different situations. Both educators and students needed to know when two additional forms of feedback were taking place: (1) educators reflecting on how the teaching had succeeded in bringing the students forward in their entrepreneurial process; and (2) students reflecting on their entrepreneurial process and on their own learning process as a form of second-order learning.

The left-hand arrow in Figure 1, from ‘educator’ to ‘educator’ indicates that teachers continuously communicate with each other about how the course is progressing. In our case, there are typically two or three educators involved in running the course and sometimes working together with student instructors. Feedback is institutionalized through debriefs among the educators after each classroom session, and through regular feedback meetings between educators and student instructors. The primary purpose of these meetings is to reflect on to what extent the teaching has succeeded in bringing the students forward in their entrepreneurial process, and to make any adjustments thought necessary to improve the teaching. This process does not take place in a vacuum. Rather, the educators take their observations during class sessions, conversations with students, and ongoing informal feedback from students into their exchange. When needed, the group of educators may also go back and consult the class.

Finally, the right-hand arrow in Figure 1, from ‘student’ to ‘student’ indicates a need for students to provide feedback to each other. The primary purpose of this activity is to enable students to reflect on their own learning in the entrepreneurial process, where the learning outcome is determined by the student’s ability to reflect on his or her own experience with the work. This contributes to entrepreneurial learning in two ways. First, these feedback processes facilitate learning ‘through’, because the students have to reflect on the process and the strategies they have used, and on why their strategies have or have not worked for them. Further, throughout the course, they are asked to use this feedback to evaluate their own learning strategies, in order to know whether they are ready to move on to the next step of the entrepreneurial process. For this purpose, we use different forms of appreciative-inquiry, group-level, peer-to-peer sessions. Second, this kind of reflective

feedback facilitates long-term, higher-level (Cope, 2003) learning. During a through-type course, students tend to be strongly engaged in their own entrepreneurial project. This is perceived, in our experience, as an intense learning environment and, because students tend to focus more on their entrepreneurial project than on their learning in this setting, they are often unaware of what they have learned through their project work. The purpose of this feedback mechanism, then, is to ensure that the students reflect on their learning, so that it becomes explicit for them. With this purpose in view, we organize plenum sessions and ask students to discuss 'where have we learned', 'from whom have we learned', and 'what have we learned'.

Insert Table 1 about here

Table 1 synthesizes our reflections from our teaching experience into a simple matrix that clarifies what each of the four forms of feedback focuses on and suggests how one would perform each of them. In the following section, we further relate this to the particular problems of using 'about', 'for' and 'through' learning in entrepreneurship education.

One has to learn 'about' and 'for' to get 'through'

Traditional academic HE consists primarily of about-type education, where the aim is for students to acquire knowledge about a subject or phenomenon. Typically, this knowledge is acquired through lectures and readings, perhaps supplemented with case examples, discussions and other 'detached' didactics. In this context, the educator is often 'invisible' and merely considered an unbiased, neutral conduit through which the university provides knowledge to the student. It is unsurprising that a traditional academic setting, with this knowledge–educator–student sequential relationship, has

developed a traditional cognitive-based assessment and feedback model, and that it continues to be refined and to survive. This tradition has been especially strong in continental Europe, where applied sciences are often taught in separate institutions from the university, with limited research activities. Yet entrepreneurship, as a traditional academic subject, is relevant only for a very small part of the student population, such as those in economics or management.

Many applied science educational programmes can be regarded as a combination of ‘about’ and ‘for’ education. Typically, students in these fields receive lectures on a particular subject (‘about’) and then proceed to work in lab settings (‘for’) on cases or assignments – often in smaller classes run by instructors. In the lab, the instructor still assumes the role of lecturer, again as an expert facilitating access to the knowledge, and the knowledge–educator–student sequential relationship remains intact. In this context, ‘about’ education is a natural precondition to ‘for’ education: without the background knowledge, students will not be able to complete the ‘for’ lab exercise session or, even if they could, they would not benefit in terms of learning from doing so. In addition, without justification by the educators and background knowledge about the importance of the subject and skill, the student will not be motivated to perform the lab exercise. In all, the aim is still for the student to understand the knowledge better and/or to acquire skills required to function as a professional after graduation. Depending on the aim, these ‘for’ sessions typically require more careful consideration with regard to didactics, pedagogy and learning than pure ‘about’ sessions. This is especially the case with regard to how lectures and training sessions support each other to achieve the intended learning progression.

Similarly, we argue that there are two preconditions for students to be able to accept and engage in a 'learning-through' entrepreneurial process. The first is that students need to understand the purpose of the process and, for that to happen, the educator has to legitimize and explain its stages to the student based on theoretical knowledge about entrepreneurship and its methods. In that sense, some 'about' entrepreneurship education is needed before students can embark on the 'through' components of their education and accept the premises for the learning process. The second precondition is that students must be trained in specific skills that are important to acting entrepreneurially in their (professional or academic) field, so that they are able to create and carry out an entrepreneurial project that requires them to engage with the real world. Students have to practise these skills before they can use them reliably in a through-type, real-life setting. Thus, students need some 'for' entrepreneurship education before they begin a 'through' component of a course.

Table 2 summarizes this perspective, with the arrows illustrating the hierarchical relationship and the dotted lines between cells indicating the interdependence of course types with regard to learning and assessment.

Insert Table 2 about here

This perspective on 'through' entrepreneurship education helps legitimize the experience-based learning process format in an in-curricular academic setting because it contains both 'about' and 'for' components. However, the learning 'through' format poses additional challenges. When students are expected to learn from the experience of going through an open-ended entrepreneurial process, with neither a clear starting point (in terms of a well-defined resource base or a lucrative opportunity) nor a clear outcome

(in terms of a predefined goal), the educator is not able to specify clearly what knowledge or learning students are supposed to acquire. Thus, the traditional knowledge–educator–student relationship is rearranged and the cognitive assessment approach becomes an inadequate base for understanding the feedback relationship between student and educator. Instead, we need to turn to the social constructivist and relationship-based feedback perspective. In helping students go through the entrepreneurial learning process, the educator cannot remain invisible, neutral or detached, but must take on a role better understood as mentor, coach, facilitator or supervisor (Carey and Matlay, 2011; Löbler, 2006; Rae, 2010).

Consequently, when supporting students in learning 'through' the entrepreneurial process, the educator's feedback cannot rely solely on a cognitivist assessment perspective. Rather, feedback must be designed and delivered to ensure that students experience all the main elements of the entrepreneurial process and that there is adequate learning through each progression. Unfortunately, in delivering 'through' entrepreneurship courses, educators often face the frustration of measuring and assessing tangible learning goals related to the 'about' and 'for' aspects of the course, even though their primary concern is the 'through' aspects of the learning. Not being able to establish relevant learning goals and to assess them meaningfully may even preclude some educators from offering 'through' courses in the first place (Pittaway and Edwards, 2012).

By clarifying the feedback spectrum in Figure 1, the corresponding student–educator relationships in Table 1 and the course design elements in Table 2, we are now in a position to offer an assessment alternative. Just as we argue that 'about' and 'for'

learning are preconditions for ‘through’ learning, we now posit that they are also preconditions for the assessment of students in ‘through’ courses. Assessment of ‘about’ and ‘for’ education is straightforward and has been done for hundreds of years. By using the existing examination formats, we can assess whether students have acquired the relevant knowledge about the theory presented, and whether they have acquired the skills for which they have been trained during the course. What we cannot do is assess the ‘through’ learning by traditional means.

As mentioned previously, and as entrepreneurship education research has indicated, assessment of the ‘through’ part of the course is challenging. The goal of an entrepreneurial process is developed throughout the course with the creation of the entrepreneurial opportunity and, therefore, the process will be different from student to student (Blenker et al., 2012). Since we have to accept that it is very hard to know and apparently impossible to assess in acceptable ways *what* individual students have learned through their experiences in the entrepreneurial process, we must focus instead on *how* they learn and this provides us with an entirely new feedback and assessment opportunity. When we ensure that students experience all the main elements of the process and guide them to ensure progress, we can assess whether they have experienced all the primary elements. Although this is part of the solution, completing the process does not ensure learning because, as mentioned earlier, due to the intensity of the entrepreneurial process, students are often not aware of what they have learned and taken away from the experience. Therefore, it is our claim that we are not able to assess on the ‘through’ element of entrepreneurship education in isolation.

Since the educator cannot assess what is right or wrong for students in the process, an alternative form of feedback is needed in which the student, through reflection, can learn to evaluate and further develop his or her own entrepreneurial process. With this in mind, the educator can have students report on whether they have experienced all the main elements of the process and can provide the justification and knowledge (‘about’) and impart the skills (‘for’) required for students to gather these experiences (‘through’) and reflect on them. In addition, educators can require that students demonstrate the use of entrepreneurial knowledge (‘about’) and skills (‘for’) to increase the quality and value of these reflections. Such reflections are deemed important for the entrepreneurial experience of students to be transformed into experiential learning (Pittaway and Cope, 2007). Furthermore, the quality of the learning is important in the development of entrepreneurial skill sets.

This alternative approach may be illustrated by taking two topics that often form part of through-type entrepreneurship courses: ideation and pitching. In a through-only scenario, imagine that students are asked to find a viable innovative solution to a problem (ideation) and, later in the course, to obtain stakeholder commitment (which could include pitching to stakeholders or customers) without further substantial instructions. In this scenario, the educator might use class sessions to prepare these activities and to have students report and reflect on them. From the perspective of the educator, we would most certainly be faced with Carey and Matlay’s (2011) point about how hard it can be to evaluate the quality of a business idea, and we may be hard pressed to evaluate why a stakeholder might accept or reject our students’ solicitation. In a ‘through’ with ‘for’ and ‘about’ course, the instructions would start with the ‘about’ background and

understanding. For ideation, this could include, for example, an introduction to Spinosa et al.'s (1997) cross-appropriation concept. Here, entrepreneurs borrow a way of doing things (practice) from one world and use it in another world, which would not on its own have conceived of that solution (e.g., the car-sharing company Zipcar could be regarded a cross-appropriation of the book-sharing practice of the library). For pitching, it could include, for example, an introduction to the costs and benefits of the use of strong versus weak ties (Aldrich and Kim, 2007; Ruef, 2002). The 'for' part would then follow. For ideation, this could include asking the class to generate a bank of good practices and argue for their contributions to the bank. For pitching, it might include having students practise their pitch on one another, identify stakeholders and discuss their viability based on their ties to the stakeholders. Progressing to the 'through' component, knowledgeable and rehearsed students could now present their ideas to stakeholders and use the knowledge and skills to reflect on how and why it went the way it did. From the perspective of the educator, we would be able to know and assess *what* knowledge and skills the students had been able to use and their level of expertise in doing so. Also, we would be able to assess *how* they had used these in their reflections on their entrepreneurial experiences for them to be transformed into learning. Hence, in their reports our students will, for example, write that 'because the preconditions in the new world do not match the old-world preconditions, we had to alter the old-world practice for it to work in the new-world situation' or 'because it was a strong-tie connection, it was easy to get commitment so it was not sufficient to test the concept' or 'we were unsure about how best to solve the problem so we picked three good practices and wrote a page on how each of them could become an innovative solution to the problem'. We

would argue that, without the skills and knowledge obtained in the 'about' and 'for' components of the course, students cannot achieve reflections that transform entrepreneurial experiences into long-term learning and the educator cannot evaluate what and how students have learned. Likewise, students cannot provide high-quality student-to-student feedback without knowledge and skills.

Discussion, conclusion and invitation

So, how do we give feedback in entrepreneurship education when courses are based on an experiential learning philosophy and structured as an open process of real-life entrepreneurial activities? Further, for what purposes are we giving feedback in through-type entrepreneurship education? The answers to these questions are important for gaining legitimacy, given that research suggests that such courses are ideal for the purposes of entrepreneurship education. They are also important because entrepreneurship education research seems puzzled by these issues – especially in for-credit HE settings, where there are reportedly tensions between for-credit and for-real (Blackwood et al., 2015; Laukkanen, 2000; Levie, 1999; Ollila and Williams-Middleton, 2011; Warhuus and Basaiawmoit, 2014). In seeking answers to these questions, we find it helpful to clarify two main perspectives on feedback in the education literature and in entrepreneurship education practice: the cognitive assessment perspective and the social constructivist assessment perspective.

With regard to the cognitive approach, we find that two main forms of feedback are used: from student to educator in the form of course evaluation, and from educator to student in the form of the evaluation of the student's performance. These two forms are categorized as assessment, and have a long-standing tradition in higher education.

The social constructivist approach is equally important in entrepreneurship education courses, with a strong focus on students learning as a result of travelling through an entrepreneurial process. We find two relevant forms of feedback based on this approach: one in which students give and receive feedback among themselves, and another in which educators give and receive feedback among themselves. These forms of feedback are dialogue-based, with the aim of creating, adjusting and supporting the development of the entrepreneurial learning process through reflection.

The central contribution of the paper is that it provides an overview of forms of feedback, suggesting that:

- in process-based entrepreneurship courses, continuous feedback is necessary because the entrepreneurial outcome and learning are gained through process adjustments prompted by the feedback exchanged during the course;
- a complex system of feedback mechanisms is at play, involving feedback among educators, among students and between educators and students, with both parties learning from giving and receiving different forms of feedback; and
- the complexity is increased when it is acknowledged that the subject of the feedback may concern the student's learning, the teaching, the process, the object of the process (the entrepreneurial project), or a combination of these factors.

From the literature on the distinction between 'about', 'for' and 'through' entrepreneurship education, it has become clear that the feedback puzzle in process-based courses arises not only from a lack of communication on what, where and who is giving feedback, but also from separating the three forms of entrepreneurship education ('about' 'for' and 'through') too much from each other. We suggest that the main reason why

feedback and assessment in 'through' entrepreneurship education remains an unresolved issue in for-credit HE is because it has been assumed that the 'learning-through' parts of entrepreneurship courses can be assessed in isolation. We have argued that this is not possible and that through-type courses must include some 'about' and 'for' elements. This conclusion does *not* suggest that learning 'through' courses are unimportant for HE entrepreneurship education. Rather, we argue that social constructivist approaches to feedback and assessment should be used for evaluating and improving the 'through' parts of entrepreneurship education courses.

The aim of this paper is to clarify what kind of feedback students and educators should provide, and for what purpose, in process-based entrepreneurship courses. The strength of our contribution is that, on the one hand, it is conceptually developed based on both the entrepreneurship education literature and the general literature on feedback and assessment in HE; and, on the other hand, it is education-based research in the sense that the feedback models have been gradually developed in our own entrepreneurship courses. However, this latter strength is also the paper's weakness. The same people have, as 'educators', developed the models and, as 'researchers', performed the analysis and presented the models. To remedy this methodological weakness, it is important, in future research, to increase intersubjective validity and verifiability by either testing these feedback models in new settings with other educators or inviting other researchers to study the feedback processes in our courses. We invite such cooperation.

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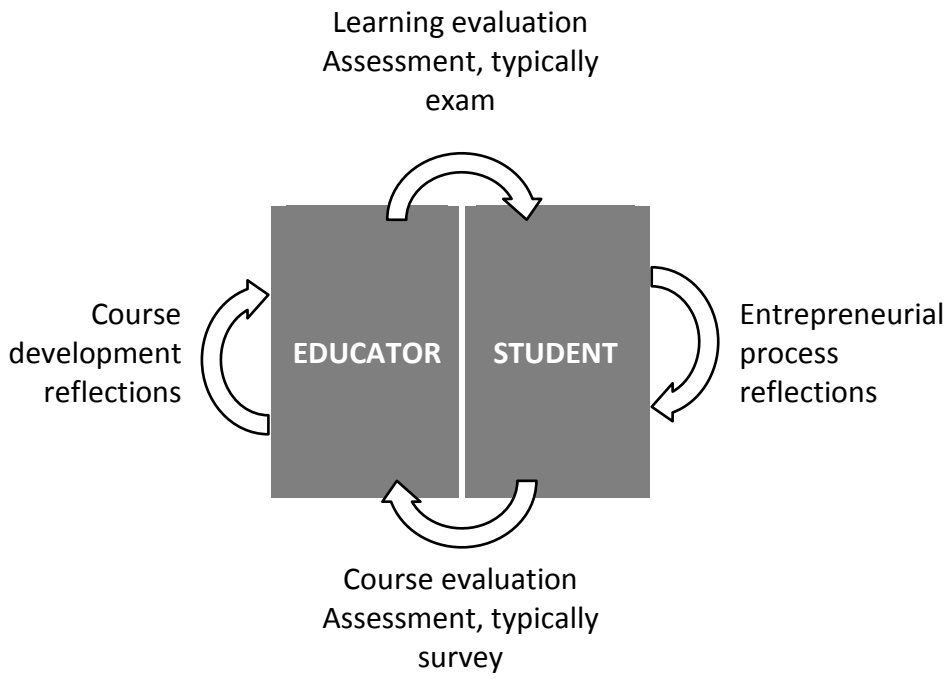

Figure 1. Feedback mechanisms used in the authors' courses.

Table 1. Feedback matrix in a process-oriented entrepreneurship course.

From \ To	STUDENT	EDUCATOR
STUDENT	Focus on: entrepreneurial process development	Focus on: assessment of course
	How this is done: guided learning process reflections	How this is done: student evaluates course, typically survey
EDUCATOR	Focus on: assessment of student	Focus on: course development
	How this is done: educator evaluates student, typically exam	How is this done: teaching process reflections

Table 2. Traditional view versus authors' interpretation and practice in 'about' 'for' and 'through' entrepreneurship courses.

Entrepreneurship course type	
Through	Through (with About and For)
For	For (with About)
About	About

Previous distinctions *Our interpretation and practice*