

Developing entrepreneurial competencies through deliberate practice

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Abstract

Purpose – In the context of the question of how entrepreneurship education can contribute to entrepreneurial competency development, this paper aims to outline the deliberate practice (DP) method and showcase how it can be applied in entrepreneurship education. To this end, this paper presents a learning innovation in which DP improves entrepreneurial competencies.

Design/methodology/approach – The paper describes an entrepreneurship training in which participants, over a seven-week period, learn about DP and use this approach to develop an aspect of an entrepreneurial competency of their choosing.

Findings – Evaluations show that participants find both short- and long-term gains in their competency development, and value having learnt a competency development method as well.

Practical implications – The presented format is designed in accordance with the DP principles as originally described in the literature on expert performance, and shows that DP can be applied in the context of entrepreneurial competency development at lower levels of proficiency. Entrepreneurship educators interested in competency development can consider to adopt (aspects of) the described approach.

Originality/value – The format applies DP principles as described in the literature on expert performance. The value lies in the short- and long term effects of the training.

Keywords Entrepreneurship, Competencies, Skills, Deliberate practice, Enterprising, Entrepreneurial, Training, Entrepreneurship education

Paper type Case study

Introduction

Entrepreneurship has become an established and legitimate teaching subject (Gabrielsson *et al.*, 2020; Hägg and Kurczewska, 2022; Nabi *et al.*, 2017). Entrepreneurship education (courses, training and programmes) is available across educational settings, from secondary schools to vocational training to higher education to MBA programs. Overviews of entrepreneurship education's pedagogical methods reveal that many educators focus on experiential formats (Fayolle *et al.*, 2019; Hägg and Gabrielsson, 2019; Hägg and Kurczewska, 2022; Nabi *et al.*, 2017). Furthermore, a sizeable percentage of those experiential formats focusses on developing entrepreneurial competencies (Lackeus, 2015; Nabi *et al.*, 2017; Lilleväli and Täks, 2017). As such, there is a need for entrepreneurship educators to be aware of theories and methods concerning competency development. Theories and methods that have proven their value in other fields and domains are of particular interest.

Competencies are not fixed traits, they can be developed and learnt through experience and training (Kyndt and Baert, 2015; Man *et al.*, 2002). Contemporary theories of competency development posit that while effortful, intentional and conscious practice help to acquire a

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certain level of competency, once a satisfactory level of performance has been reached, actions become automatic and are processed without conscious control (Keith *et al.*, 2016). Therefore, a key issue in competency development is that at points of routinisation, merely adding experience in the form of repeating the same activity does not lead to increased levels of performance (Dew *et al.*, 2018; Unger *et al.*, 2009). A sizeable body of research on top experts in a wide variety of domains has aimed to explain how such individuals overcome their performance plateaus to become and remain leaders in their fields. This body of research concludes that so-called “deliberate practice” is suitable for overcoming the stagnating effects of automaticity (Ericsson, 2006; Ericsson *et al.*, 2007).

In the context of the broader research question of how entrepreneurship education can contribute to entrepreneurial competency development, this paper aims to outline the deliberate practice (DP) method and showcase how it can be applied in entrepreneurship education. To this end, this paper presents a learning innovation in which entrepreneurial competencies are developed through DP. Although DP originates from studies of top expert performance, it can be applied at any level of competency development (Ericsson and Pool, 2016). The presented format is designed in accordance with the DP principles as originally defined, and shows that DP can be applied in the context of entrepreneurial competency development, refuting the claim sometimes made in the entrepreneurship literature that DP as used in “classical” domains, such as sports and music, would not be possible in entrepreneurship (Baron and Henry, 2010; Unger *et al.*, 2009; Keith *et al.*, 2016).

DP entails a comprehensive set of principles that will be outlined first. Next, its relevance is discussed in the context of entrepreneurship education and training. The next section reviews conceptual discussions and empirical applications of DP in the entrepreneurship research literature. Then, a format will be presented as used in a course for university master’s students provided yearly between 2015 and 2020. The next section provides evidence for the effectiveness of the format. Finally, the discussion presents implications, limitations and research opportunities.

Deliberate practice

Research on experts in various domains shows that many top performers develop their competencies through a particular training method: DP (Ericsson, 2006; Ericsson *et al.*, 1993). The basic principles established by research on DP and expert performance apply to a remarkably wide range of domains, and DP has been found to explain exceptional performance in fields such as musical performances (Ericsson *et al.*, 1993), sports (Hodges *et al.*, 2006), chess (Charness *et al.*, 2005), artistic performance (Noice and Noice, 2006), creative writing (Kellogg, 2006), insurance sales (Sonnetag and Kleine, 2000), software design (Sonnetag *et al.*, 2006) and medicine and surgery (Norman *et al.*, 2006). DP is primarily a way of overcoming performance plateaus (“arrested development”, Ericsson, 2006, p. 696) caused by the automatisisation and routinisation of behaviour arising once a certain satisfactory level has been reached. I now outline the elements which make up DP (Ericsson, 2020; Baron and Henri, 2010).

Firstly, DP is specifically designed to improve performance by identifying and practising performance levels that are currently just out of reach. For many activities, individuals can achieve a reasonable level of proficiency (initial levels often within 50 h). A key challenge for those who wish to develop further is to avoid the arrested development associated with automaticity. DP helps individuals break out of these automatic patterns by identifying, usually under the guidance of a coach or trainer, behaviours representing the next level of proficiency. These identified behaviours lie slightly outside of the individual’s current behavioural repertoire. Therefore, in DP, one never practices routinely. It is about acquiring a new proficiency level, which requires conscious control and attention.

Secondly, with DP, rather than practising several aspects simultaneously, the focus is on a single, separately actionable behaviour that participants can perform by themselves. A third characteristic is that this action is then practised repeatedly. For example, Lionel Messi practices a particular free-kick many times after group training, or a violinist repeatedly plays a small part of a composition in an improved manner. Thus, in DP one attempts to do one thing very well rather than practising several things at once. Fourthly, as the examples of Messi and the violinist indicate, DP usually runs separately from actual performance. In a football game, Messi does not take hundreds of free kicks from the same spot, and in a concert, a violinist does not play the same small part hundreds of times. Fifthly, DP makes extensive use of feedback. Different measurements (such as video recordings, use of observers, subjective ratings and time measurements) are used to track progress against the learning goal. Based on the feedback, a training participant may make small adjustments to their practice. As such, reflection plays an important role in DP. Participants continue to reflect on their practice, ensuring the practice focuses on behaviour just outside the habitual zone, though inside the learning zone. Reflection also helps participants improve their mental model of the practiced behaviour.

The sixth and final attribute of DP is that it is hard to engage in. DP cannot be practised mindlessly; it requires awareness and focus. It aims at expanding and improving a behavioural repertoire and avoids reinforcing existing behavioural patterns. The individual is continuously doing something in a manner they have not yet fully mastered. Because of its intensity and the required focus and concentration, DP is exhausting and can only be sustained for a few hours at a time.

Given that DP emerged from studies on top experts, a question to address is whether DP can help lift the competency levels of non-experts; in other words, at lower levels of performance. Ericsson states that it does. “While the principles of deliberate practice were discovered by studying expert performers, the principles themselves can be used by anyone who wants to improve at anything, even if just a little bit” (Ericsson and Pool, 2016, p. 16). The main reason is that the underlying situation is similar. Performance plateaus occur at any level of competency development. DP provides a systematic method to “unfreeze” the current behavioural repertoire and replace it with behaviours associated with the next level of proficiency.

Engaging in DP may result in substantive rewards, advancing skills and knowledge related to the practised competency. Furthermore, engaging in DP for a substantive period has been found to have wider cognitive benefits as it enhances perception, memory and meta-cognition (Baron and Henry, 2010; Ericsson and Pool, 2016). Although the group around Ericsson, as well as other scholars (e.g. Charness *et al.*, 2005; Hodges *et al.*, 2006; Kellogg, 2006; Sonnentag and Kleine, 2000; Unger *et al.*, 2009), found positive effects of DP on performance, some authors have been critical of DP’s stated effects. Specifically, some have challenged the claim that DP is not just a necessary condition but even a sufficient condition to become a top expert performer (Campitelli and Gobet, 2011; Hambrick *et al.*, 2014). Even on logical grounds, such a claim indeed seems overstated. If all experts practised DP, it would cease to predict top expert performance.

More generally, a group of scholars around Hambrick and Macnamara concluded that, in addition to DP, a wide range of distal factors explain top expert performance, including genetic, opportunity, ability and personality factors, and a range of proximal task and situational factors (Hambrick *et al.*, 2014, 2016). Again, purely on logical grounds, it seems inevitable that other characteristics play a role as DP, given its demanding nature, requires antecedent attributes and significant motivation. The Ericsson and Hambrick/Macnamara camps continue to debate the extent and uniqueness of the effects of DP (Ericsson, 2020; Macnamara and Hambrick, 2021). Nevertheless, they agree that “deliberate practice as it has been operationally defined and measured in research over the past two decades by Ericsson

and colleagues and by others who have used their research as a model, explains a sizeable amount of the variance in expertise” (Hambrick *et al.*, 2016, p. 14). When using DP in a training or in the classroom, it is important to be aware of these debates, and provide participants with an accurate understanding of the extent to which engaging in DP may contribute to competency development.

Competency development in entrepreneurship education

A significant percentage of entrepreneurship education aims to promote entrepreneurial skills and competencies (Lackéus, 2015; Nabi *et al.*, 2017; Lilleväli and Täks, 2017). Competencies are defined as the combined and integrated components of knowledge, skills and attitudes (Kyndt and Baert, 2015; Lilleväli and Täks, 2017; Van Gelderen, 2020). Although the terms competencies and skills are sometimes used interchangeably, the definition of competency makes explicit that competency-based education not only concerns the behavioural component (the skill) but also the knowledge involved and the attitude by which actions are taken. According to Lilleväli and Täks (2017), competence models and competence-based education have become widely spread throughout different fields of education. DP ties in nicely with several features of competency development in entrepreneurship education.

Firstly, DP can be applied at any level of competency development (Ericsson and Pool, 2016). Within entrepreneurship, holistic competence models such as the EntreComp (Bacigalupo *et al.*, 2016), have been developed depicting a gradual development of competence throughout education levels and against qualification standards (Lilleväli and Täks, 2017). As such, entrepreneurial competencies can be promoted at foundational, intermediate, advanced and expert levels. DP is a method to overcome performance plateaus arising at any level. At lower levels, no professional coach is needed. In the format described in the next section, academic and non-academic sources can provide guidance, and so do student peer coaches. Moreover, while 10.000 h of practice may be needed to become an expert (Ericsson, 2006), at lower levels reaching a next level of proficiency can be achieved in far fewer hours (Ericsson and Pool, 2016).

Secondly, various authors (Lans *et al.*, 2018; Lilleväli and Täks, 2017; Van Gelderen, 2020) have noted that there is no consensus on a definite set of entrepreneurial competencies. Various lists exist, some based on desk research or armchair reasoning (e.g. Kyndt and Baert, 2015; Man *et al.*, 2002; Mitchelmore and Rowley, 2010), others based on the inputs of experts, such as practising entrepreneurs, business developers, or university professors (Chandler and Jansen, 1992; Morris *et al.*, 2013). However, no consensus is necessary for DP’s application; each educator can help develop any competency of choice as long as the practice is structured in line with the DP principles outlined in the previous section.

Thirdly, authors providing overviews of entrepreneurship education routinely explain the distinction between narrow and broad views of entrepreneurship (Gabrielsson *et al.*, 2020; Gibb, 1993; Hägg and Gabrielsson, 2019; Lackéus, 2015; Lilleväli and Täks, 2017). In a narrow sense, entrepreneurship education concerns the processes of starting and running a business and is focused on starting a new venture. In a broad sense, new venture creation is just one manifestation of “acting on opportunities and ideas and transforming them into financial, cultural, and/or social value for others,” as defined in the EntreComp (Bacigalupo *et al.*, 2016, p. 10). Applied to entrepreneurial competencies development, the broad approach focuses on generic, transversal competencies, such as creativity, teamwork and persuasion, sometimes designated as enterprising competencies (Bridge, 2017; Dinning, 2019; Gibb, 1993; Lackéus, 2015; Onstenk, 2003). Again, DP can be applied regardless of whether an educator favours the broad or narrow approach; whether broad or narrow, competencies can be developed by practice structured alongside DP principles.

Fourthly, authors have observed that in addition to debating “what” competencies should be developed, there is also the question of “how” to do this (Lans *et al.*, 2018; Lilleväli and Täks, 2017). Lans *et al.* (2018) propose that this requires student-centred learning environments with five core design principles: (1) active student participation, (2) the teacher as facilitator and coach of the learning process, (3) cooperative work or team-based work, (4) real-life, authentic assignments and (5) opportunities for self-regulated learning for students. DP can comply with all these features, as the format described later in this paper will illustrate.

Entrepreneurship education needs effective methods to develop entrepreneurial competencies. The suitability of DP has been observed in entrepreneurship literature, yet at the same time, the uptake of DP has been limited, as the next section will outline.

Deliberate practice in the current entrepreneurship literature

The entrepreneurship literature has taken notice of the relevance of performance plateaus and DP as a method to overcome them (Baron and Henry, 2010; Dew *et al.*, 2018; Keith *et al.*, 2016; Unger *et al.*, 2009). For example, Baron and Henry (2010, p. 51) state that “Across many different activities, most individuals show relatively rapid increments in performance up to levels they and others view as acceptable. This is then followed by a plateau and no further gains. As a result, most individuals remain at a particular level of competence for years or even decades despite growing experience as measured by time of active involvement in a particular domain.” DP is identified as a method to overcome such performance plateaus. Keith *et al.* (2016, p. 519) state that “deliberate practice activities specifically designed to address performance deficiencies and aimed at altering the use of suboptimal techniques are suitable to overcome these “detrimental effects of automaticity” (Ericsson, 2006, p. 696).”

Although the entrepreneurship literature conceptually embraced the importance and relevance of DP, the empirical literature relating DP to entrepreneurship went off on an alternative track. According to Unger *et al.* (2009) and Keith *et al.* (2016), DP as used in “classical” domains, such as sports and music, would not be possible in entrepreneurship. They reasoned that entrepreneurs engage in a wide variety of behaviours, have little repetition in their tasks, have limited feedback available, operate in dynamic and uncertain environments and are often too busy to practice DP. Instead, their empirical work sought to single out entrepreneurial practices and redefined DP as the degree to which entrepreneurs engaged in these practices to improve their competencies (Keith *et al.*, 2016; Unger *et al.*, 2009). Examples include holding firm meetings, engaging in private conversations and professional reading. The extent to which entrepreneurs engaged in such activities for competency improvement was then related to venture success with weak and mixed results.

Unfortunately, as a representation of DP, this approach falls short. Firstly, engaging in activities such as holding meetings and doing professional reading with the aim of competency development may result in informal learning (Keith *et al.*, 2016), but has little to do with the comprehensive set of practices constituting DP (that is, a deliberately designed activity, aimed at mastering behaviours that are not yet in the behavioural repertoire, which is practised with a high degree of repetition and uses a range of feedback indicators and minor adjustments). Using a proxy measure disconnects from the theoretical and empirical work that originated DP and generated evidence for its practical relevance. Secondly, this literature relates the engagement in these practices to venture-level outcomes, whereas DP’s aim is more proximal, namely to increase proficiency in the activity itself. It is the way one holds meetings, does professional reading, etc. that DP would aim to change and improve. The studies mentioned above do not investigate the effects of DP on the proficiency level of the practices themselves.

The learning innovation presented in this paper counteracts the idea that DP, as originally conceived, does not apply to entrepreneurs. Although many entrepreneurs are busy, they may be able to commit to 30 or 60 min per day to DP if they prioritise competency development. In particular, this applies to entrepreneurship education students, who have prioritised their development as entrepreneurs by the very act of enrolling in training or study. Entrepreneurship as a practice may be ill-structured and lack repetition, feedback, or coaches. However, for any behavioural aspect of a given competency that an entrepreneur or entrepreneurship education student wishes to improve, a learning task can be designed in line with the features of DP in “classical” domains. For example, if an entrepreneur wants to become more effective at delivering pitches by speaking at a slower pace, a learning task could be designed in which he/she sets apart a designated amount of time each day to engage in this behaviour, using various feedback channels and making minor adjustments based on that feedback until the new behaviour (speaking slower) has become habitual.

The next section details a seven-week procedure in which DP, as originally conceived, is applied to a wide variety of entrepreneurial behaviours.

Description of the format

The format described below can be provided as a stand-alone course or as a module in a broader course. It requires six to eight weeks. My course, which serves as an example, is an elective Master’s level course held at a Dutch university, attended by students of entrepreneurship, finance, accounting, digital business innovation and strategy. I have delivered this course yearly for six years, with approximately 30–40 students in each course. The learning goals for the students are twofold: firstly, to improve an aspect of an entrepreneurial competency, and secondly, to master the DP method.

- (1) Introduction to entrepreneurial competencies, and DP and its six principles (Day 1)

The opening session familiarises students with the concepts of entrepreneurial competencies and DP, particularly the six constituting elements of DP as outlined earlier in this paper in the “Deliberate Practice” section. My course covers six individual-level enterprising competencies: generating ideas for opportunities, taking action, perseverance, networking, teamwork and convincing others. These competencies feature routinely in any list or competency model (see the overview by [Lilleväli and Täks, 2017](#) of the competencies covered by five major competency models). However, it is up to the reader which competencies are covered. In principle, each competency can be practised as DP as long as the learning task is designed in accordance with its principles. For any point for improvement, a suitable learning task, incorporating the complete set of DP principles, can be designed (see step 3 below).

- (2) Have students identify an aspect of an entrepreneurial competency they like to work on (Day 2–7; extra days or weeks can be assigned depending on the exercises involved)

Regarding the competencies featured in the course, lectures on these competencies are given based on the overviews provided on my website [name withheld]. In addition, I use a pre-assignment that uses an experiential learning format challenging students to practice enterprising competencies and helping them reflect on their behaviour and identify points for improvement. However, engaging in such a pre-assignment is optional; it is also possible to have students identify a point for improvement based on their life- and work experience.

Students can be required to choose an activity they practice in a social setting. If the activity is visible to others (including the coach), it promotes the identification of behaviours outside the current behavioural repertoire and creates additional pressure to engage in the

activity. An activity does not need to be inherently social (e.g. engaging in a creative practice); if so, then the results can be shared (e.g. sharing the creative ideas the activity generated).

The coursework is individualised, with each student working on a competency aspect of their choosing. This makes the format optimally individually relevant and provides authenticity, as advocated in the literature on entrepreneurial competency development (Bolzani and Luppi, 2020; Dinning, 2019; Macht and Ball, 2016; Morris and König, 2020). One example, which I will return to throughout this section, is a student who wanted to become more animated in her facial expression. This is an aspect of the “convincing others” competency. See Table 1 for further examples of behavioural aspects of competencies on which students have worked.

- (3) Design a learning task in daily life in which the behaviour can be repeatedly practised and for which feedback can be obtained (Day 7)

The lecturer splits the class into small groups (“communities of learning”) of 7–10 students. Within each small group, each student gets to share the topic they want to work on, as well as any initial ideas for a learning task. With every student individually choosing what to work on, each learning task is designed uniquely, though always complying with DP principles. Together with the student and the rest of the group, the lecturer co-designs the learning task. These tasks are designed so that they make use of daily life situations. There is no financial cost to students, and engagement in DP is not hampered by resource constraints, as advocated by Ericsson *et al.* (1993).

Topic/Goal	Learning task/Activity examples	Feedback examples
1 Expressiveness. Loosen up muscle faces	Become a greeter at a shopping mall entrance, 2 × 30 min daily. Emergent: greeting situations in daily life (e.g. in shops, in apartment building)	Time spend making greetings. Time to start session. Feeling of facial stiffness. Feeling of internal discomfort. Response of public. Observation by coach
2 FOBO/FOMO reduction	Use imposed decision heuristic after 90 s in low-involvement situations such as what to have for breakfast, which movie to watch, e.g. first or last 30 s of minute on watch; coin toss. Emergent: responses to invitations	Sticking to time arrangement. Sticking to decision. Level of internal discomfort. Self-rating of feeling of regret
3 Speaking at lower pace	Take random flyer from wall and give announcements at start of random lectures; create and post vlogs. Emergent: when receiving phone calls	Drink water bottle while presenting, amount of water taken in. Number of words per minute. Level of internal discomfort
4 Maladaptive perfectionism reduction	Send email or WhatsApp message with typos. “Backspace ban”. Cook meal for partner in less than 10 min	Having executed substandard action. Response of others. Level of internal discomfort. Number of deliberate errors
5 Shyness/Initiate contact with strangers	Walk in park with (borrowed) dog; remain in elevator in building with many floors: open conversation based on observation. Emergent: daily life encounters	Time to action. Difficulty level. Perception of similarity. Level of internal discomfort. Number of small talk conversations initiated. Stick to “five-second rule”
6 Broaden network diversity	Visit events/places that are unfamiliar and initiate conversation with regular attendants. Emergent: initiate contact when encountering individuals of maximum psychological distance	Time to action. Level of internal discomfort. Number of conversations initiated. Response of others

Table 1.
Examples

In the case of the student who wished to become more expressive in her facial expression, the created learning task was that she would stand at the entrance of a shopping mall for about 30 min, twice every workday over two weeks, greeting shoppers who enter (“Welcome!”) or exit (“Goodbye!”) the mall while working on her expressiveness. Often, students can use their specific circumstances, so it is good to enquire about their living conditions and daily activities. For example, a student who wanted to become more curious (seeing it as relevant to generating ideas for opportunities to create value for other people) living in a student house with 30 fellow students can attempt to find out something new about each of them in every encounter. But for a student who lives alone, this is not feasible.

Various types of feedback are identified and collected. In the case of the greeting task, feedback might be the level of internal discomfort, time to action (between the planned time to start the practice and the actual time of starting), feelings of facial stiffness and responses from the public. See [Table 1](#) for more examples of types of feedback. Typically, the feedback concerns the behaviour, not the behaviour’s *effect*. For example, in [Table 1](#) example 5 (initiating contact), the task is to initiate a conversation based on an observation (“That’s a beautiful bag”; “Nice weather”). How the other person responds is not relevant to the practice unless it is part of the task. For example, in [Table 1](#) example 4 (reducing maladaptive perfectionism), it is helpful to note the response of others to, for example, errors in emails or WhatsApp messages (usually there is no response).

A peer coach also provides feedback. The session in which the learning tasks are designed, is also used to assign peer coaches. Each student coaches another student, and is coached by yet another. In the example of the facial expressiveness practice, the coach dropped by at the mall at the beginning and end of the practice period to rate the degree of facial expressiveness. Coaches also help to further co-design the task, think through possible modifications to the practice based on feedback and play a motivational role.

When designing and executing the learning task, students use implementation intentions ([Gollwitzer, 1999](#)). Implementation intentions specify the action and the conditions under which it is practised. In the example of the woman working on facial expressiveness, an implementation intention could be: “I will go to Shopping Mall X every workday from 10:30 to 11:00, and from 15:00 to 15:30 to welcome people.” In this example, the student plans the action, date and setting. Implementation intentions can also be used for emergent opportunities to practice. An emergent implementation could be: “Whenever an opportunity to greet someone arises (for example, in a store, when seeing acquaintances), I will greet them with more expressiveness.” See [Table 1](#) for examples of planned and emergent opportunities to practice the targeted behaviour.

- (4) Have students conceptually pursue their topic in a report (report 1), using both academic and non-academic sources (Writing days 8–18, Grading days 18–22). Based on the conceptual investigation, possible modifications are made to the learning task. Conduct trials of the learning task.

Before starting their practice, students conduct a conceptual investigation of their topic, later presented in a written report. This allows them to build and improve their mental model regarding their chosen topic and the behaviour to be practised. For example, the student from the expressiveness example investigates facial muscle stiffness. She might ask what it is, what it is caused by, and what remedies exist. Both academic and non-academic sources (such as TED talks and YouTube clips) can be used with the caveat that the latter need to be used critically. This way, students learn about the behaviour that they want to practice. They improve their understanding of what their practice entails, and what factors affect the aspect of the competency they want to practice and develop. Students are asked to tie the discussion of their topic into their own situation. This will help them arrive at the most relevant

application of the information sources to the learning task design. Students use the knowledge they gain to modify or improve the learning task designed under point 3, so that it best fits their aims. Another part of the assignment is trialling the learning task, engaging in it a few times to see whether it works well in practice. If not, they modify the learning task, possibly in consultation with the lecturer. Once the assignment has been submitted, the lecturer quickly grades the assignment reports so that students receive further feedback and can get started with their actual practice. See [Appendix](#) for a marking schedule for report 1.

- (5) Practice the learning task for 10 consecutive working days, approximately 60–90 min each day (Days 23–37). Keep track of actions, feedback and modifications in a log.

Each student practices their learning task for 10 working days. The number of trials varies considerably depending on the task, but the time spent per day should be around 60–90 min. For example, the student greeting visitors to the mall could perhaps greet 100 or 200 people, whereas someone initiating contact with people who are psychologically distant (see [Table 1](#), Example 6) may just have a few trials each day. However, the latter task requires more preparation, singling out appropriate events and travelling there. Participants keep track of actions, feedback and modifications in a log (typically in Excel). Each attempt (or group of attempts, as in the case of the greeter) is on a new row, with day, time, activity, duration, location, outcome, feedback type 1, feedback type 2, feedback type 3, feedback type 4, adjustments and comments as columns. With each learning task uniquely designed by and for each student, there is no one-size-fits-all description of the procedure of obtaining feedback. However, the objective is the same: to collect explicit, formally registered feedback. The feedback is used to track progress and can indicate a need to make adjustments to the practice task.

Typically, the new behaviour feels awkward at first; it represents a new pattern outside the participant's current behavioural repertoire. However, by repeatedly engaging in the new behaviour, it often becomes less scary and less difficult. For example, for most people, after repeated appearances, public speaking becomes less difficult over time, reducing the typical negative physical, emotional and cognitive responses (sometimes they disappear entirely). As an example, the student seeking to diversify her network ([Table 1](#), Example 6) may discover that seemingly different people are not so different after all. If the new behaviour becomes comfortable within the two-week practice period, the student can adjust the difficulty of their actions. During the practice period, participants meet with their coach a few times. The role of the coach is to help and encourage, and to be an additional source of feedback. The coach (and, if necessary, the lecturer) can help to ensure that the learning task remains optimal.

Approximately two-thirds of the way into the practice period, the learning communities and the lecturer come together. Each student reports their practice so far, and the group discusses any possible improvements or modifications to their practice.

- (6) Write a report (Report 2) on the practice and its conceptual underpinnings; include a plan for further development (Day 38–42)

In the final assignment, students report their DP of the aspect of the entrepreneurial competency that they focus on. They describe their practice, the process they went through and the effects they noted in terms of the various forms of feedback. They further reflect on the literature they discussed in their conceptual investigation. Did it help them, and what factors did the literature overlook? The format includes reflection before, during and after the experience (steps 2–4; 5; and 6, respectively), as advocated by [Hägg and Kurczewska \(2016\)](#) and [Pepin \(2012\)](#). Reflection is inherently associated with DP as it involves the careful and conscious use of feedback to improve the actual practice and the mental model associated with it.

Progress will vary as some behavioural aspects can be improved considerably over two weeks, whereas others may take more time. Therefore, participants also write about the future: whether and how they plan to continue the practice after the course is over and the course credits have been received. Additionally, they write 100–125 words about how they contributed to the competency development of the fellow student for whom the student served as a coach or mentor. Furthermore, they write 100–125 words about how their coach helped them. See [Appendix](#) for a marking schedule for Report 2. Grading is based on the depth of effort, the depth of reflection, and on the effort made as a coach, not on absolute or relative levels of competency improvement.

Format effectiveness

The training described in the previous section has been provided each year for six years as an elective for Master of Business Studies students and involved 162 participants in total. [Table 2](#) shows the evaluation scores from the official university evaluations held at the end of the course. These evaluations are held in a period of three weeks after classes for the course have ceased. Participating students receive an electronic link to a survey which they can fill out anonymously. Administration of the university evaluation system is done by general university staff members who have no ties to the lecturer or the course. The statements in [Table 2](#) come directly from the survey.

The response rate is 70 out of 162. In 2020 the evaluations were somewhat lower, possible because the course needed to be adapted at the last minute to suit a lockdown situation due to COVID-19. This reduced options to design and work on learning tasks and reduced social interaction to online formats.

In addition to using the data generated by the formal university evaluation system, I reached out to the students who took part in the years 2015–2019 to assess any longer-term effects. I could only approach students who had provided a private or work email address (at the time of participating, students could choose their preferred email address for the course, and university email addresses become defunct after graduation). The survey was filled out by 23 of the 112 former students that could be invited. The four items in [Table 3](#) reflect Kirkpatrick’s four levels of evaluation: reaction, learning, behaviour and results ([Kirkpatrick](#)

Evaluation questions (5 point scale)	2015 <i>N</i> = 4	2016 15	2017 19	2018 9	2019 16	2020 7	All 70
It was an interesting course	4.8	4.7	4.7	4.8	4.9	4.4	4.7
The learning objectives were clear to me	4.5	4.6	4.3	4.8	4.6	4.3	4.5
The relevance of the course to the program was clear to me	4.5	4.3	4.2	4.3	4.6	4.1	4.3
I learnt a lot from this course	4.8	4.7	4.5	4.6	4.8	3.7	4.5
The materials were clear and informative	4.3	4.4	4.4	4.4	4.4	3.7	4.3
Overall rating of the quality of the content of this course	4.5	4.6	4.5	4.6	4.9	3.9	4.6
The assignments were useful	4.3	4.8	4.5	4.6	4.8	4.1	4.6

Table 2.
Evaluation scores from
the official university
evaluation system

Evaluation questions (7 point scale, 1 = not at all; 7 = completely)	<i>M</i>	<i>SD</i>	Min	Max
Did you enjoy the course?	6.7	0.5	6	7
Did you learn from the course?	6.4	0.7	5	7
Did the course change your behaviour?	5.6	0.9	4	7
If so, did your changed behaviour produce positive results for you?	5.7	0.9	4	7

Table 3.
Evaluation scores from
the follow-up
survey (*N* = 23)

and Kirkpatrick, 2006). See the items in Table 3 for their operationalisation. The official university evaluation, being held straight after the course finishes, only generates evidence on the first two types (whether participants liked a course or program and learnt from it). The follow up survey, held years after the course has been completed, allowed for asking whether the course changed the participants' behaviour and whether this brought positive results for the participants. Respondents indeed saw long-term changes in their behaviour, affecting long-term positive results. It is well possible that students who found the course more effective were more likely to respond to the survey.

Both the official university evaluation and the follow-up survey also asked for qualitative feedback, reported in Table 4. The students' input was coded by means of the thematic analysis procedures as outlined by Guest *et al.* (2012) and Braun and Clarke (2006). Thematic analysis is a qualitative technique for identifying, analysing and reporting patterns (themes) in data that does not involve counting phrases or words as is done in content analysis. In the first step, comments are given first order codes that are literally drawn from the text and do

Long term impact

After looking up and reading my essay, I have to say that I'm surprised that this course affected my life in more ways than I could have imagined beforehand. I am a different person now compared to who I was writing the essay, all thanks to what I learned during the course

As I am reflecting upon the course now, I realise I have actually improved even more after the course. Unique opportunity to improve a skill during a university course

This was probably the most impactful course I did during my Masters. The main benefits are that the course taught ideas, practices and reflected on personal development. It aimed the focus towards myself and what I can improve of my immediate behaviour that is holding me back. It provided a template of how to analyse myself, and create a plan with incremental steps to follow in order to be better

I am grateful that I found this course. It has changed a lot for me. I appreciate that the university offers courses like this. I was able to change things in my business, which have truly improved my working situation
It helped me a lot. It challenged me on a personal level and helped me grow

Relevance

The content is extremely important and should be taught in every business school. It opens minds on the entrepreneurial world. Furthermore, the fact that training can be brought to the next step is important to students

The course was really exceptional in a very positive sense. It was really business- and practice-oriented and focused on personal skills necessary for being an entrepreneur

It was really relevant because it was of added value to my private and professional life! Enjoyed the practice I would highly recommend this course. I have never attended such a course before in which you are really able to develop yourself and find out who you are and what you can improve. It was fun, intriguing, and satisfactory

The deliberate practice project was one of the most effective learning techniques I have ever encountered during my time as a master's student. I have seriously broken through mental barriers thanks to this class and have seen my productivity skyrocket

Ownership

Very rarely students get the opportunity in the coursework to do what they really want to do. In this course, one can and is expected to do that

Quite rarely does a student get the opportunity to design his own assignments to exactly fit his individual need. With the guidance of a teacher that has an eye for individual constructive feedback and material that he believes in, it is impossible to go through this course without making any personal development

The ownership over the content. As a student I got the responsibility to design my own development plan and this contributed greatly to my learning experience

It was adult education instead of education for children. It was a new way of learning and helped to self-reflect on my strengths and weaknesses. It changed parts of my behavior in a positive way

The open atmosphere in the class in which students cooperate to improve personal matters that they would normally never talk about is very important and inspiring. The classes work very motivating in this way, something I have never experienced in university before

Table 4.
Qualitative evaluative
statements

not involve an interpretation or evaluation. Then, the first-order codes are grouped together at a higher level of abstraction based on similarities in content, and this process is repeated until a limited number of higher-order codes emerge, which can then be labelled as themes. The themes that emerged from the data are long term impact, relevance and ownership (Table 4).

The results shows that the participants appreciate improving the behaviour of their choice, as well as mastering a competency development method. The first three statements are from the follow-up survey; the rest are from the university evaluation taken immediately after the course. Several students reported breakthroughs replacing previous behavioural routines with new ones. Although DP focuses on a narrow aspect of behaviour, participants regularly report beneficial effects generalising from the narrow task. Students also report that they appreciated the small learning community (the class is divided into groups of 7–10 students) and that they felt free to show their vulnerabilities.

The evaluation scores and comments are generally very positive, and Tables 3 and 4 indicate that the format can bring about transformational learning (Mezirow, 1997). Nevertheless, in my experience, the format is demanding and participants may encounter several issues:

- (1) Although motivation tends to be high, with the course being an elective and students choosing their own point of improvement, engaging in DP is still hard. It requires full awareness and focus to practice new behaviours. Not all participants will succeed each day in achieving their practice goals. It is important for the instructor and the coach to continue motivating students to engage in practice and assure participants that is inherent in the method that practice may not always be as perfect or frequent as intended.
- (2) The course can be personally difficult as students are invited to practice behaviours they currently do not master, and they often choose to address issues that have been bothering them for quite some time. It can be scary to admit a weakness (most students work on a weakness, rather than bolster a strength) and practice a new and unfamiliar behaviour. As the last quote in Table 4 indicates, it is important to create a respectful, supportive atmosphere in the small workgroups/learning communities.
- (3) Individually choosing one's topic, studying it, designing a practice task and doing the actual practice can all be seen as instances of self-directed learning (Morris and König, 2020). However, students vary in their readiness for self-directed learning and their need for guidance (Hägg and Kurczewska, 2020).
 - Some students do not know what to practice. Even if a pre-assignment is given to help students identify points for improvement and if they see other students in their learning community settle on topics/goals and learning tasks, a few cannot think of any point for improvement. The instructor can then turn to a meta-level and propose making the lack of self-awareness a point for improvement.
 - Some students have difficulty focussing on a single behaviour and continue to design plans in which they practice the competency involved in a broad sense. However, in DP one focuses on a single repeatable behaviour. Even if several attempts to focus do not help, the instructor can turn to a meta-level and propose to make the inability to focus the point for improvement.
 - Some students keep changing their topic and/or the learning task. If even several attempts to have the student stick to a plan do not help, the lecturer can turn to a meta-level and propose making the inability to stick with a course of action the

point for improvement. FOBO (fear of better options) and FOMO (fear of missing out) problems, common amongst millennials, often underlie this issue.

- (4) It is important from the outset to manage expectations by explaining that this format concerns individual-level competency development and that students will not start their own business. A few students seem stuck in their belief that entrepreneurship courses are invariably about starting a business. This may particularly apply to students majoring in subjects other than entrepreneurship. The message to be conveyed is that entrepreneurial competencies eventually contribute to successfully starting and running a venture.
- (5) As my course is scheduled in the spring, many students were concurrently working on their thesis and/or finding a job after graduation. Some are keen to turn something they would be doing for their thesis or job search into the topic for DP, such as recruiting research participants or securing job interviews. While it is laudable for students to identify activities that are useful for them, my experience is that it is more effective if the practice is clearly set apart. One element of DP is focus, a second is practising a single aspect of behaviour, a third is that practice runs separately from performance. All are easier to achieve if a student specifically sets time apart to master the new behavioural repertoire, rather than mixing it with immediate study or work concerns.
- (6) Although students tend to make progress with their chosen aspect of improvement, in many cases, two weeks of practice is merely a beginning, and the new desired behaviour has not yet become routinised. Often students would benefit from continuing their practice after the course has finished. It is important to encourage students to do so.

Discussion

Overall, the learning innovation presented in this contributes to the entrepreneurial competency development literature in multiple ways. Firstly, it highlights a method for competency development which has proven its value in other fields and domains. Several entrepreneurial competency models have been developed (Lilleväli and Täks, 2017) – but developing these models does not in and by themselves develop competencies. Entrepreneurship education needs a variety of methodologies to develop entrepreneurial competencies, and DP can be one of them.

Secondly, amongst these methodologies DP offers an opportunity for deep learning as the format requires respondents to focus both conceptually and in their practice on a single aspect of behaviour for an extended period. As such, the format goes beyond interventions of a single lecture or experiential exercise. DP purposefully aims to expand the novel behavioural repertoire rather than reinforce existing behavioural patterns by merely adding experience. It contributes to the entrepreneurship education literature by providing an example of an application of a method explicitly designed to overcome performance plateaus.

Thirdly, the application of DP connects to a broad and established research base. As Baron and Henry (2010, p. 63) state, “It is important to reiterate that the basic principles established by research on deliberate practice and expert performance apply to a remarkably wide range of fields and domains, ranging from sports and music to chess, science, and creative writing. Thus, there are empirical grounds for proposing that they are also applicable to the domain of entrepreneurship.” The presented format is designed in accordance with the DP principles as originally defined, and shows that DP can be applied in the context of entrepreneurial competency development. This refutes the claim made in the

entrepreneurship literature that DP as used in “classical” domains, such as sports and music, would not be possible in entrepreneurship (Unger *et al.*, 2009; Keith *et al.*, 2016).

Fourthly, DP ties in well with some features of entrepreneurship education as outlined earlier in the “Competency Development in Entrepreneurship Education” section. DP can be applied at any proficiency level, making it suitable for application in a variety of educational contexts. DP can be applied regardless of a narrow or broad definition of entrepreneurship, with the latter having the advantage that entrepreneurial competencies can be trained of individuals who may not necessarily be interested in starting their own venture. And the application of DP does not require a consensus amongst scholars on a set of entrepreneurial competencies; entrepreneurship educators can apply DP to any competency they and/or their students find relevant.

In terms of practical applicability, the paper has described a particular format in detail. This provides interested entrepreneurship educators with an example, which may prove useful when designing their own application of DP. Apart from participants being motivated to improve their level of proficiency, and apart from that the application of the method takes time, there are no entry barriers to engaging in DP. With learning tasks situated in daily life situations, there is no financial cost. As the practice is tied to the current competency level of the participant, it can be designed at any level. Participants can practice DP whether they intend to start a business or desire to be more entrepreneurial in a broader sense. Although the format described in this paper concerns an application to university students, there is no *a priori* reason why it could not work at other levels of education, including the secondary school level.

The provided evidence for effectiveness for the presented format has certain strengths. Firstly, it presents both quantitative (ratings) and qualitative (comments) evidence. Secondly, it relies on multiple sources: comments and ratings provided anonymously through the university evaluation system and comments and quantitative ratings from participants obtained years after the completion of the course through a follow-up survey. Thirdly, it covers all levels of evaluation as outlined by Kirkpatrick: reaction, learning, behaviour and results. Fourthly, the format has been tried out in practice for six years. Nevertheless, the provided evidence has limitations. An experimental design with pre-/post-test measurements, a control group and longitudinal follow up of outcomes would have provided stronger evidence for the format’s effectiveness. This represents a future research opportunity. Future research may also establish specific issues to be considered when applying DP to educational contexts other than that of a university master course.

Conclusion

The learning innovation presented in this submission provides an example of how DP, as described in the DP literature, can be applied to the training of entrepreneurial competencies. DP is not for the faint-hearted. It requires a lot of focus and concentration to practice behaviours that are currently out of reach and go against previously learnt patterns. However, if successful, participants not only develop a competency aspect, they master a competency development methodology.

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Appendix

See [Tables A1 and A2](#).

Part	Explication
Introduction (weight: 5%)	Start with a few interesting sentences that entice the reader to read further Clear and short explanation of the topic and the purpose of the report Brief overview of what the reader can expect
Deliberate practice overview (10%)	One-page summary of the deliberate practice literature
Discussion (50%)	Comprehensiveness of investigation The discussion zooms in on the single aspect of behavior that will be practiced Alignment of the discussion section with the practice outline (the info should be relevant to the practice) Connection of information sources to your own personal situation Depth of use of academic sources (theory and empirical studies) Depth of use of non-academic sources (e.g. websites, videos)
Practice outline and trials (30%)	Specificity of initial practice outline Application of deliberate practice principles in the design of the learning task (e.g. stretch goal, organisation of feedback) Use of implementation intentions (planned and/or emergent) Comprehensiveness of report of trials of practice outline and possible adaptations to practice outline
Presentation (weight: 5%)	Attractive title page; quality of writing, grammar and spelling errors Layout of the report. Correct use of APA style referencing Use of Arial or Times New Roman, 11-point font, 1.5 line spacing Clarity of report structure; use of headings; use of colour

Table A1.
Marking schedule for conceptual investigation assignment (Report 1)

Table A2.
Marking schedule for
the practice
assignment (Report 2)

Part	Explication
Introduction (weight: 5%)	Start with a few interesting sentences that entice the reader to read further Clear and short explanation of the topic and the purpose of the report Brief overview of what the reader can expect
Log and effort (50%)	Detailed log of every effort, including observations of results, feedback and affecting factors. Effort put into the practice runs. Application of deliberate practice principles (stretch goal, repetitions of minute behaviours, organisation of feedback, adjustments of schedule, mental effort) Description (in full sentences) and reflection on your practice Critical reflection on the literature/sources in Assignment 2
Reflection on literature (20%)	
Peer coaching contribution (20%)	Depth of reflection on fellow students' deliberate practice, and your own role in this. Effort to involve your coach, and description of the effort of your coach to help you
Presentation (weight: 5%)	Attractive title page; Quality of writing, grammar and spelling errors Lay-out of the report Correct use of APA style referencing Use of Arial or Times New Roman, 11-point font, 1.5 line spacing Clarity of report structure; use of headings; use of colour; use of images and pictures

About the author

Marco Van Gelderen is a psychologist specialising in enterprising behaviour. Marco focuses his research as well as his teaching activities on individual level enterprising competencies. Examples of such competencies are generating ideas for opportunities, taking action, perseverance, networking, teamwork, and persuasion. For research overviews of these competencies, see the website that Marco maintains: www.enterprisingcompetencies.com. He has developed several formats to study as well as practice these competencies, and conducts workshops and (short) courses in various countries and settings. Marco is currently editor of the learning innovation section of the *Entrepreneurship Education and Pedagogy* journal. Furthermore he is an editorial board member of the *Journal of Business Venturing* and of *Entrepreneurship Theory and Practice*. Marco Van Gelderen can be contacted at: m.w.van.gelderen@vu.nl

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