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**Article**

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## Article

# Perceptual Fluctuations within the Entrepreneurial Journey: Experience from Process-Based Entrepreneurship Training

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**Abstract:** The entrepreneurial idea and opportunity are formed in the entrepreneurial process, which is characterized by entrepreneurial learning. During the entrepreneurial journey, the entrepreneur repeatedly reassesses the maturity of his business/venture idea and venture creation process to enter the market. The entrepreneur's decisions are influenced by both objective and affective circumstances. This study aims to identify and map the fluctuations of idea–opportunity perception and affection by a student entrepreneur throughout the entrepreneurial learning journey simulating a genuine entrepreneurial (learning) process. The data collection of variables took place during an entrepreneurship course that modeled the entrepreneurial journey via process-based entrepreneurship training and applying feasibility and attractiveness self-assessment, observation and in-depth interviews. A small group of doctoral students developed their business ideas during a process-based entrepreneurship course. After each lesson and homework, they assessed the feasibility and attractiveness of their idea and opportunity. The results showed asynchronous fluctuations in these individual context-based perception variables, frequently depending on the progression of the entrepreneurial journey. The study added the concept of affective artifact and some generalizing dimensions to describe the entrepreneurial journey. Recommendations are given for the implementation and research of entrepreneurial process-based training.

**Keywords:** perceptual fluctuation; affect; entrepreneurial journey; entrepreneurial opportunity; entrepreneurial idea; perception; feasibility; attractiveness; process-based entrepreneurship training



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## 1. Introduction

Entrepreneurial cognition has recently become a subject of interest among entrepreneurship researchers (McMullen et al. 2014). Significant attention has been paid to the role of affect–behavior interconnection in entrepreneurship (Cardon et al. 2012; Dimov 2007; Foo et al. 2015). Generally, there has been an increasing interest in understanding the impact of affect on behavior (Baumeister et al. 2007; Forgas 1995; Schwarz and Clore 2007). Researchers have viewed this subject from many angles; however, there is still much to be studied in the affective fluctuation. Affect is a continuous and unstable phenomenon that should be studied in dynamics. Su et al. (2020, p. 5) argue that ‘on the basis of dynamics, complexity and uncertainty of the entrepreneurial process, the emotional state in decision making may affect the judgment and results of entrepreneurs differently, and emotions may play an important role in it’.

Fluctuations in the trajectory of the entrepreneurial journey are an objective phenomenon that accompanies learning as a result of feedback received during the entrepreneurial process. However, an entrepreneur's decisions and behavior depend on his/her cognitive qualities and how he/she perceives the state of his/her business development in the context of the environment, resources and personal interests. Subjective perception and emotions play an important role in entrepreneurial decisions. How rational or relevant they were will only become apparent afterwards—when they start a business (McMullen and Dimov 2013; Mets et al. 2019). Until then, several, sometimes

many, up-and-down assessments of own business idea and opportunities may take place, which are followed by corresponding changes in the entrepreneurial journey. This is shown by empirical studies, where the entrepreneur transforms his/her original idea into an unrecognizable form by the end of the entrepreneurial journey (Mets 2018, 2021). It also means fluctuations in the entrepreneur's perception and assessment of the maturity of his/her new venture creation process. The real maturity of a new venture appears only by the successful reaching the market or some other equivalent goal. Until that, the maturity of the venture is perceived, not yet real. Understandably, this process involves the alternation of positive and negative emotions throughout the entrepreneurial journey (Su et al. 2020).

A similar phenomenon can occur in entrepreneurship training that imitates the entrepreneurial process (Mets et al. 2013), where the student experiences positive and negative emotions when receiving and perceiving new information during the development of his/her idea (Foo et al. 2009). By measuring the impact of educational entrepreneurship interventions on students using a self-assessment questionnaire, it turned out that despite the overall increase in competence (up to an average of one point in a five-point Likert scale), a significant proportion (10–23%) of students perceived the result as negative (Mets et al. 2020). We assume that by shedding light on a student's feelings and perceptions on his or her idea and opportunity throughout the entrepreneurial journey, we will also develop a better understanding of the startup entrepreneur in the development of his/her business idea.

Naturally, entrepreneurs and entrepreneurial behavior are key subjects in understanding entrepreneurship. The behavior of entrepreneurs is influenced by affection because entrepreneurs operate in a complex environment, and their decisions are associated with risks and uncertainty. Subsequently, affect is an indispensable part of the behavior of entrepreneurs; affect influences the dynamic and fundamentally changes the entrepreneurial decision-making process. However, much uncertainty still exists about the fluctuations of affection, opportunity desirability (attractiveness), opportunity belief and feasibility perception within the entrepreneurial journey (Wood et al. 2014).

Overall, this study aims to identify and map the fluctuations of idea–opportunity perception and affection by a student entrepreneur throughout the entrepreneurial learning journey under the conditions of process-based entrepreneurship training. Achieving this aim means seeking answers to the following questions: (1) How does the perception of an entrepreneur regarding the feasibility and attractiveness of an idea and entrepreneurial opportunity change during the progression of the entrepreneurial (learning) journey? (2) What are the methodological recommendations for taking into account fluctuations in the perception of feasibility and attractiveness within the idea–opportunity perception in entrepreneurship education?

The paper is divided into seven parts. The section following the Introduction outlines the theoretical foundation (entrepreneurial process and journey, process-based entrepreneurship training, fluctuations of perception). The third part is devoted to the methodology of the training and this study, a description of the sample and the process of research. The fourth section shows the findings and their interpretation. The fifth section develops a discussion followed by implications and limitations. Finally, the conclusion gives a brief summary and critique of the findings. As a result, the authors disclose the trajectories of idea and opportunity perceptions by student entrepreneurs within the entrepreneurial learning journey by simulating stages of the entrepreneurial process.

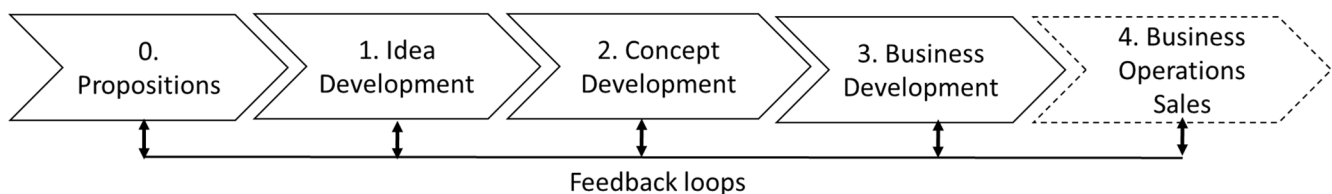
## 2. Theoretical Foundation

### 2.1. Entrepreneurial Process as an Entrepreneurial Learning Journey

It is generally accepted that the entrepreneurial process is an entrepreneurial learning process (Cope 2005; Dimov 2007; Politis 2005), which manifests itself, among other contexts, in the creation of a new venture. Entrepreneurial learning is defined 'as an experiential process where the personal experience of an entrepreneur is transformed into knowledge, which in turn can be used to guide the choice of new experiences' (Politis 2005, p. 407).

Experiential learning is explained by Kolb's learning cycle theory (Kolb 1984), known also as the 'learning by doing' concept (Mets et al. 2013). Because the entrepreneurial process is inherently goal- and feedback-driven and iterative (Bhave 1994), the entrepreneurial learning journey follows the same logic.

The general scheme of the entrepreneurial process, i.e., the new venture creation, which is completed as a result of entrepreneurial learning (Mets et al. 2019) in a simplified form, is as follows (Figure 1). It starts with Propositions, followed by the stages of Idea Development, Concept Development, Business Development and regular Business Operations/Sales. The output of each stage is a mental or material artifact, which is also an input to the next one. In this order, the artifacts (starting from Propositions) are Intention/Perceived Opportunity, New Venture Idea/Filtered Opportunity, Business Concept/Opportunity Confidence and New Venture Launch/Opportunity Exploitation (leading to Business Operations/Sales).



**Figure 1.** Process chart of a new venture creation and entrepreneurial learning.

The whole process is characterized by feedback from the next stages to the previous ones as well as within the individual stages (as a result of learning according to Kolb's cycle). The source of the feedback signal can be both the environment in the form of information about the customer and market and the entrepreneur's opportunities to obtain resources. The whole process is constantly changing and dynamic.

Cope (2005), conceptualizing the dynamics of entrepreneurial learning, notes it to be an interactive process in which 'the individual develops a clear appreciation of their own strengths and weaknesses and those of their potential business in relation to the wider environment' (p. 379). He points out the affective dimension (fluctuations) in this process, considering 'that mistakes, crises, and failures can have a negative immediate impact in both business and personal terms' (p. 384). In contrast, the positive events of entrepreneurial success have the opposite effect.

Dimov (2010) points out that a factor in the success of a new venture emergence is the belief in the feasibility of the opportunity, on which the desire to pursue the opportunity (i.e., opportunity attractiveness) depends. (It also means believing in one's own business idea.) Although opportunity confidence was measured as an average over the venture creation process using the Panel Studies of Entrepreneurial Dynamics (PSED) dataset (Dimov 2010), the statistical approach does not make sense of what the dynamics of the idea–opportunity relationship throughout the process evolve and depend on. Kurczewska et al. (2016) point out the lack of theoretical constructs and empirical evidence capturing the dynamic aspects of the opportunity (application) process.

In this context, the progression of the entrepreneurial process, i.e., the journey of realizing the entrepreneurial idea and opportunity (as addressed by McMullen and Dimov 2013), is measured by the dimension of the maturity of the entrepreneurial process or venture maturity (Mets 2015; Mets et al. 2019). Due to the above, the entrepreneurial journey is also an entrepreneurial learning journey. The appearing artifacts denote the milestones of the stages of the entrepreneurial journey (about artifacts, see, e.g., (Saravathy 2003)). Until the implementation of the entrepreneurial business opportunity, the maturity of the venture is perceived and the reality becomes clear only when starting a successful venture (Mets et al. 2019). The entrepreneurial journey may include a repeated business idea and opportunity reassessments and up-and-down fluctuation curves before the venture launch is realized (Mets 2018, 2021).

## 2.2. Entrepreneurial Idea and Opportunity

Much uncertainty still exists about idea construct. The idea is not the subject of special research of the majority of entrepreneurship studies. The construct idea can rarely be found in entrepreneurship-focused publications (according to an analysis of definitions of entrepreneurial opportunity published over 19 years (Hansen et al. 2011), few examples (5 out of 56) of prior work mention a construct idea). At the same time, even those researchers who mention an idea do not explain what the idea is, do not operationalize this construct and do not reveal the idea–opportunity concept pair.

One of the significant current discussions is the understanding of entrepreneurial idea and opportunity (e.g., Dimov 2020; Hill and Birkinshaw 2010). ‘One main reason as to why progress in the scholarly understanding of opportunities has been hindered is that the majority of prior work has not distinguished between the constructs of venture ideas and venture opportunities’, argues Peter Vogel (2016, p. 944).

A person’s business idea is hereby seen as ‘a mental image of a particular group of customers benefiting from using a particular product or service’ (Dimov 2007, pp. 565–66), in other words, ‘offering, targeted customer segment’ (Vogel 2016, p. 948). Hill and Birkinshaw (2010, p. 89) categorize an idea ‘as a product idea, a market idea, a technology idea, a production methods idea, a business model idea, and so on’, or combinations of these. The idea may change within the entrepreneurial (venture creation) process and journey concluding as ‘(new) venture idea’ denoting ‘imagined future venture’ (Vogel 2016; Davidsson 2015). From the logic of these definitions, one can conclude that the original specific business idea becomes a venture idea of how the entrepreneur realizes it.

Although the entrepreneur is continuously redesigning the entrepreneurial opportunity as well, the opportunity is understood as the potential to create a new market and the environment to implement the idea (Dimov 2020). This includes a situation where an entrepreneur can sell his/her service/product and obtain the resources to do so. While an entrepreneurial opportunity is initially imaginative, the chance to implement it is objectified within the entrepreneurial process (Wood and McKinley 2010). Unfortunately, we do not know in what synchronicity and interdependence the progression of an idea and an opportunity on the entrepreneurial journey are.

## 2.3. Entrepreneurial Process-Based Entrepreneurship Training

Experiential entrepreneurship training methodology is rooted in the constructivist and socio-constructivist paradigms of learning (see, e.g., Löbller 2006) based on Kolb’s (1984) theory. In entrepreneurship education, this means applying entrepreneurial learning based on an entrepreneurial process. In such an approach, that teaching method would belong to the ‘learning through entrepreneurship’ category (Kyrö 2008). Although university entrepreneurship education may result in students setting up their own business, this is the exception rather than the rule. Usually, during university degree studies, a student can only partially complete the process of setting up a new venture as the outcome of an entrepreneurship course. However, this means that the entrepreneurial process is only partially completed, and the remaining is simulated (Pittaway and Cope 2007a, 2007b). Nevertheless, through simulating the entrepreneurial learning, the student gains extensive experience in undergoing important parts of the entrepreneurial process and journey (Mets et al. 2013, 2019).

According to Mets et al. (2013), the structure of the entrepreneurial process can be viewed as similar to that of the educational process: (1) a consequence of actions, (2) chronological changes and dynamics of variables and (3) combination of data on the elements of the process. The trajectory of chronological development is used in the training process following the journey of new venture creation (disclosed in Section 3). This also means designing the entrepreneurship course (topics) in line with the stages of the entrepreneurial process. The difference between process-based entrepreneurship training and a real entrepreneurial process may be the absence of launching the startup during the



study course, as presented in Figure 1. However, the first stages of the journey in both cases overlap.

#### 2.4. Perception of Feasibility and Attractiveness of Entrepreneurial Opportunities

Mapping the entrepreneurial journey shows repeated fluctuations in the perception of the maturity of the entrepreneurial venture creation process, as a result of which the entrepreneur re-evaluates and modifies the understanding and opportunities for implementing his/her idea (Mets 2018, 2021). However, such changes in the journey trajectory occur/may occur as a result of an outcome artifact created within each stage, sometimes repeatedly, during the entrepreneurial process. The latter situation is described by a certain process/journey interruption that has been identified by ex post studies. However, there are very few real-time studies on the progression of the entrepreneurial process within one specific stage of the process. During this time interval, the entrepreneur makes perception-based decisions about the entrepreneurial idea and opportunity (of course considering his/her own goals and any collected new information).

Perception is a construct that helps understand the behavior of people. According to the theory of planned behavior (Ajzen and Fishbein 1980; Fishbein and Ajzen 1975; Ajzen 1991), perception reflects the cognitive component of behavior, and it has an impact on affective component and connotative component and eventually shapes behavior through entrepreneurial intention (Oliver and Swan 1989). Thus, perception has an impact on affect and behavior and becomes the main driving force of entrepreneurial intention (Liñán and Fayolle 2015; Keller and Kozlinska 2019). Recently, investigators have examined the role of the affect in behavior of entrepreneurs (Cardon et al. 2012; Dimov 2007; Foo et al. 2015; Podoyntsina et al. 2012; Delgado García et al. 2015). They found that affect ‘covers different affective states, among which the main ones are “moods” and “emotions”’ (Cristofaro 2019, p. 6).

When looking for affective indicators that characterize an entrepreneur’s perception of opportunity, two constructs are frequently used: feasibility and desirability (Fitzsimmons and Douglas 2011). Personal feasibility and desirability are interpreted as attractiveness (Wood and McKelvie 2015), associated with belief in opportunity (Wood et al. 2014). Although opportunity belief does not necessarily mean intention to implement an idea, it is a necessary prerequisite for venture creation.

Affective factors fulfill a crucial function in entrepreneurship, being an important part in entrepreneurial behavior and decision-making and influencing perception of opportunities, dynamics of opportunity identification and development of the entrepreneurial process and journey. Cristofaro (2019) argues that it is vital to understand the ‘causes of deviation from canonical rationality’. Several studies have identified relationships between affective indicators that influence an entrepreneur’s decisions and behavior (e.g., Autio et al. 2013; Wood et al. 2014). Questions have been raised about the dynamics of affective states within the entrepreneurial journey. As we know, affect changes fundamentally over time (Cope 2005), and the influence of fluctuations of affective states on perception can be radically different.

### 3. Methodological Approach

#### 3.1. General Methodological Approach of the Study

As we have seen from the literature review, there is no information about the dynamics of perception and affective fluctuations within the entrepreneurial journey, and there is no causal explanation for these dynamics. This means that there is both a need and an opportunity to empirically study and describe the course of these fluctuations. As a result of empirical research, an attempt will be made to identify possible regularities (patterns) that can be generalized and, if successful, to develop models or theories that explain these dynamic phenomena.

The general methodological approach is a comparative case study (e.g., Yin 2009) combined with other methods, which analyzes the participants’ assessments of their

idea and opportunity during the training process simulating the entrepreneurial learning process (for more about simulating entrepreneurial learning, see, e.g., [Pittaway and Cope 2007a](#)). As it was not clear from previous research how a start-up entrepreneur perceives his/her chosen idea and the opportunities for its implementation during the course of the initial stages of the entrepreneurial journey, this is an exploratory study. The use of a process approach ([Van de Ven 1992](#); [Langley 1999](#)) in the study allows one to search and find causal explanations ([McMullen and Dimov 2013](#)) for possible fluctuations. The pattern match theory can be used to compare cases ([Trochim 1989](#)). To do this, the method of training is introduced, followed by the constructs to be measured; the conduct of the study is then described.

### 3.2. Application of Process-Based Entrepreneurship Training

The methodology applied in the paper is mainly based on a theoretical framework proposed by [Mets et al. \(2013, 2019\)](#) and [Mets \(2015\)](#), which triggered the change from multiple dimensions of the entrepreneurial process to the construct maturity (of the process of venture creation) and process stages' outcomes (artifacts). Based on these theoretical models ([Figure 1](#)), the authors developed the process-based entrepreneurship training course and implemented the training as an educational process. The topics of the course were structured according to the stages of the entrepreneurial process development (see [Table 1](#)). The approach allows for connecting training with the entrepreneurial process and journey.

**Table 1.** Structure of Entrepreneurial and Learning Processes.

Stage of Entrepreneurial Process and Journey	Checkpoint and the Topic/Phase of Process-Based Entrepreneurship Training Course
0. Proposition/Prior Knowledge and Idea	0. Beginning/Before the Course/Initial Idea
1. Idea Development	1. Idea of Startup. Idea and Reality. Idea and Creativity
2. Concept Development	2. Scan Environment. Analyze Industry. Identify Opportunity. Recreate Idea 3. Protect Idea. Intellectual Property Issue
3. Business Development	4. Bring the Idea into the Market 5. Define Capital Needs and Get Funding 6. Few Minutes Can Define Your Entrepreneurial Journey. Presentation of Strategy

Source: developed by authors.

Thus, the course includes a wide variety of topics consistent with differences in perception. All the checkpoints were made before the next meeting and before the students familiarized themselves with the new learning materials. This means that the students' perception was measured before the first topic (prior experience, initial idea) and before every other topic. The initial (0) phase 'Before the Course' helped gauge the perception of own idea and opportunities at the beginning of the entrepreneurial process and journey. The first topic/phase 'Idea of Startup. Idea and Reality. Idea and Creativity' corresponds to the Idea Development stage of the entrepreneurial process. The second topic/phase 'Scan Environment. Analyze Industry. Identify Opportunity. Recreate Idea' corresponding to the Concept Development stage improves understanding of the market, context, competitors and own competitive advantages. Here, a potential entrepreneur understands his/her market position, difficulties of entering the market and competition. The third topic/phase 'Protect Idea. Intellectual Property Issue' continues Concept Development reaching Opportunity Confidence, which turns the attention of a potential entrepreneur to formal and legal aspects; it becomes clear how to transform an idea within the formal institutions of an entrepreneurial ecosystem. The fourth topic/phase 'Bring the Idea into the Market' brings the learner to analyze and plan the market, promotion, production facilities, logistics, human resources and organization. The fifth topic/phase 'Define Capital Needs

and Get Funding' is dedicated to issues of financing, investments and available financial resources—all preparation for Venture Launch. The sixth concluding topic/phase 'Few Minutes Can Define Your Entrepreneurial Journey. Presentation of Strategy' prepares the learner to involve investors with the target of Venture Launch and Business Operations.

Compared to the actual entrepreneurial process, students go through the same stages of entrepreneurial learning as an entrepreneur when creating their own company: they create and analyze idea(s) and opportunities using the same methods, including those arising from real customer needs and the market situation. They also test their idea with a potential customer. The difference can come in stage 3, Business Development, where the entrepreneur actually invests and, if necessary, hires labor. It can also be a step leading to decisions on changes in the previous steps (feedback process), which are repeated at a new level. This means that the journey by the student may remain not completed at this stage in the sense of venture creation. (Of course, there are cases of student entrepreneurs launching a venture during their studies (e.g., [Mets et al. 2013](#).) There may also be a lack of feedback signals and learning cycle repetitions from the Business Development stage in the educational simulation process. However, the main part of the entrepreneurial learning journey is completed, and the relevant experience is gained using simulation of the entrepreneurial process.

### 3.3. Research Constructs and Method

In the present study, feasibility is interpreted as a more objective criterion than attractiveness, which is characterized by desirability from the entrepreneur's point of view. Although perception is subjective and person-centered, the decision of feasibility is made by taking into account the known information, and desirability (attractiveness) is purely an expression of the entrepreneur's own attitude. Since we did not know the dynamics of the 'idea–opportunity' concept pair on the entrepreneurial journey, both criteria/dimensions were used to measure these two features characterizing the entrepreneurial process throughout.

We applied the qualitative mixed method composed of observation combined with the questionnaire and semistructured in-depth interviews. The first phase included an observation of the current state of idea development and assessments by a student entrepreneur. The trainer of the course observed/monitored the development of the students' ideas through the submitted homework (in an online environment) and self-assessments, which were presented before each subsequent topic addressed in the learning process. An observation has several advantages; for instance, an observation helps resolve a crucial issue—the 'real time' data collection and analysis. Thus, it is an important issue, while the majority of entrepreneurial studies are based on the retrospective approach. However, the retrospective approach ([Dimov 2016](#)) does not provide an understanding of opportunity, process and journey as continuous phenomena. The validity of retrospective research in the current context is debatable since, in retrospect, the last solution/option used and the path that led to it will be best remembered. The observation solves this problem by making it possible to explore how opportunities are born and transformed and to trace the dynamics of the process and the trajectory of the journey on an ongoing basis. The second phase of the empirical study included a series of in-depth interviews with the participants of the course. The main goal was to understand why and how the perception of opportunities was changing during the course and its influence on the entrepreneurial opportunity, process and journey.

### 3.4. Conducting an Entrepreneurial Process-Based Course, Sampling and Measurements

A vital aim is to understand the perception of idea and opportunity at the initial stage of the entrepreneurial journey. In this regard, we examined phenomenon through cases (idea and opportunity developed by PhD students). PhD students represented a unique sample, as they are highly skilled, have profound knowledge and intend to transform their knowledge into business ideas and new ventures. The detailed observation of students



throughout the course and measurements of their perception of ideas and opportunities in response to each studied topic allowed us to trace changes in perception and to understand in detail the features of the changes. It is important to conduct qualitative research that helps deeply trace the phenomenon. Therefore, using case studies is the most appropriate approach.

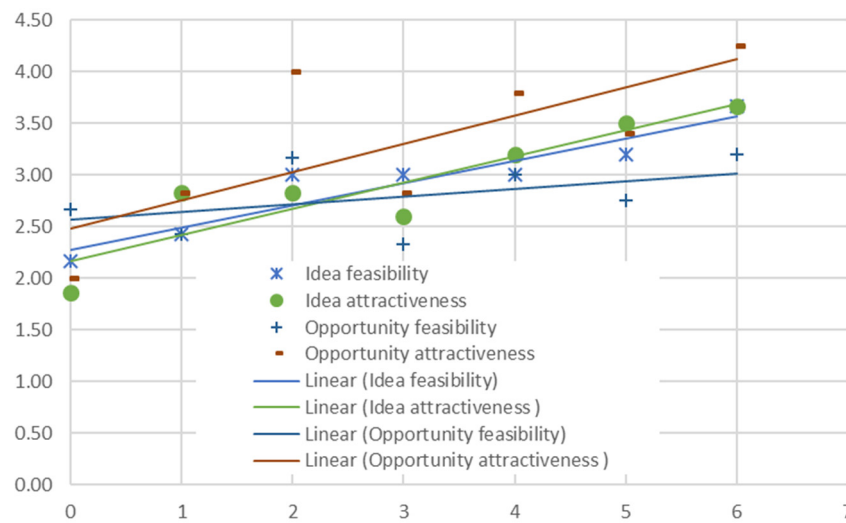
The 4-month course involves an in-depth study of entrepreneurship and is organized for doctoral students of the University of Tartu. The course is six credit points and was developed by the Chair of Entrepreneurship. The timeline of the course took place from February to May 2020. Because of the COVID-19 pandemic situation, the online training method was used. The main topics of the course are presented in Table 1. The participants of the course were composed of seven PhD students of different specialties (convenience sample; Appendix A) who were taking an elective course in entrepreneurship (general subject course for all PhD students). As the entrepreneurship program for doctoral students is optional, it is up to them to decide to take the course. There were no students with previous experience in entrepreneurship or family members or friends involved in entrepreneurial activities. The participants approached the course with their own business idea already. Additionally, the optional status of the course enabled the tutor to be focused on people who have made a conscious choice and intent to become at least prospective entrepreneurs.

Measurements were taken at the beginning, before the course and after each completed topic to trace the changes in the students' perception towards the studied phenomena. The short questionnaire measurement was used; it was designed with two blocks: (i) a block dedicated to the idea (feasibility, attractiveness) and (ii) a block dedicated to the opportunity (feasibility, attractiveness). After each topic of the course (see list of the topics in Table 1), the students were asked to register their perception of attractiveness and feasibility of their ideas and opportunities. The five-point Likert scale questionnaire was used: 1—not feasible/attractive; 2—the level of feasibility/attractiveness is low; 3—the level of feasibility/attractiveness is medium; 4—the level of feasibility/attractiveness is high; 5—absolutely feasible/attractive (see also Appendix B). Altogether, there were seven measurement points, one at the beginning of the course (before the first classes) and one after each of the six topics (following each class). As some students skipped some measurements, individual trajectories are presented based only on those who presented complete data. According to the initial estimate, the fluctuations of the other students' measurements are similar to those presented in the next subsection. All estimates have been used to aid in the averages. Although the number of measurements is modest, this does not preclude a qualitative analysis and comparison of individual cases and development trajectories using pattern match theory (Trochim 1989).

## 4. Findings

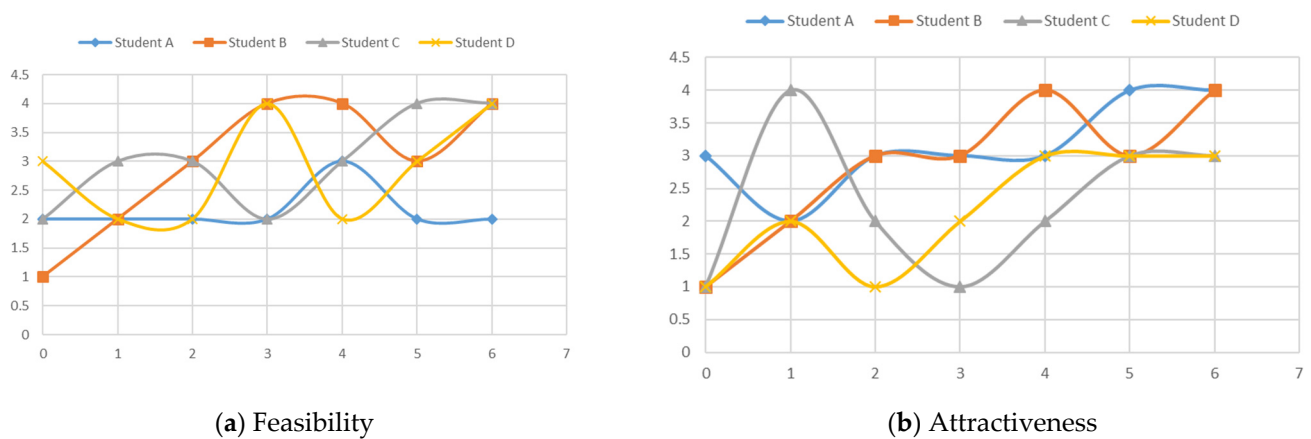
### 4.1. Results of Measurements within the Entrepreneurial Learning Journey

The results of measurements indicate the assessments of student entrepreneurs about the feasibility and attractiveness of their business ideas and entrepreneurial opportunities throughout the observed part of the entrepreneurial journey (checkpoints 0–6). As the entrepreneurial learning journey did not lead to a new venture launch during the course, there was no possibility to check the validity of the assessments in terms of the feasibility of the business. The general trend of estimates was increasing (Figure 2). The smallest total change was in the assessment of the feasibility of the entrepreneurial opportunity, which happened to be negative for student A (more details in Section 4.3).



**Figure 2.** Trends of mean values of business idea and opportunity assessments by seven students on Likert scale 1–5. Checkpoints 0–6 correspond to Table 1.

The increase in the attractiveness of the idea and business opportunity indicated the stimulating effect of the course on students. The same can be observed based on the dynamics of individual student assessment timeline cases, but there are strong fluctuations (Figure 3), which can be explained by the individual specifics of idea development and progression of learning, as well as the entrepreneurial journey. (It should be noted here that the time series of each student’s perception and affect assessments forms one case).

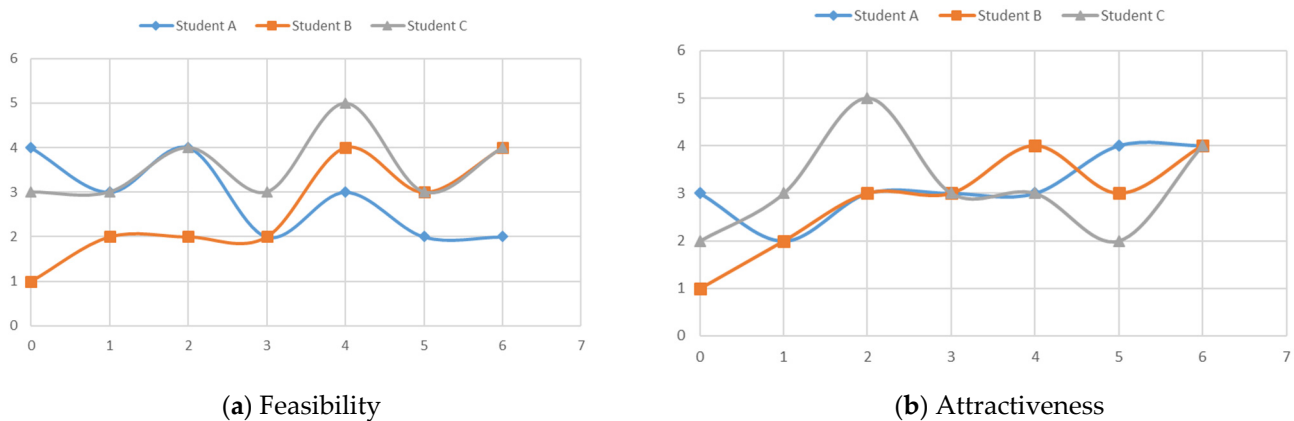


**Figure 3.** Dynamics of perception of idea (a) feasibility and (b) attractiveness by four students along the entrepreneurial journey on Likert scale 1–5 (min-max). Checkpoints 0–6 correspond to Table 1.

Student assessments of two sides of the idea at the so-called turning points (‘critical learning events’ according to Cope (2005)) in the perception trajectory of the feasibility and attractiveness variables (Figure 3a,b) requires more explanation. Each new phase (subprocess) of the entrepreneurial learning process shapes a student’s understanding—the cognitive or mental map of the idea–opportunity association in terms of the feasibility in the real environment. It also means perceptual and affective artifacts (for more information on these types of artifacts, see (Heersmink 2021 and Piredda 2020)), which the student evaluates based on Likert’s five-point scale. These artifacts assessed by a student at every checkpoint shape the trajectory of these phenomena over the period of the course (student A’s decisions in the checkpoints are explained in Section 4.3).

It can be observed here that changes in perception of the idea attractiveness pattern, describing the desirability–affective side of the idea, are not synchronous with feasibility

pattern as the result of objective reality-fit perception. The perception of feasibility of a business idea and an idea's attractiveness can change simultaneously either in a common direction or in opposite directions. It is also possible that one variable will change and another will remain the same. A similar phenomenon appears in the assessments of the entrepreneurial opportunity (Figure 4).



**Figure 4.** Dynamics of perception of opportunity (a) feasibility and (b) attractiveness by three students along the entrepreneurial journey on Likert scale 1–5 (min–max). Checkpoints 0–6 correspond to Table 1.

Asynchrony is also reflected in the assessments of feasibility and attractiveness of an entrepreneurial opportunity. The decrease in student A's assessment of the perceived entrepreneurial opportunity during the course must be noted here. This is a good example to use to look in more detail at the reasons for using that interview.

#### 4.2. Observations Made during the Training Course

In addition to the observations made during the measurement, the authors observed a number of qualitative changes in the development of students' ideas and opportunities. Both the idea and opportunity were developed by students in the framework of home task completion. One could observe here that dealing with the idea became (along the journey) more precise and narrow; however, the formulation of the idea remained quite stable and did not change as dramatically as opportunity. For example, one student had a quite simple idea of Cat Cafe. It is a cafe where guests have the opportunity to pet/communicate (emotionally) with real cats and play with them. This initial idea remained stable and did not change along the learning process. In this case, the transformation of the idea was minimal, and the student tended to retain the idea without any fundamental changes.

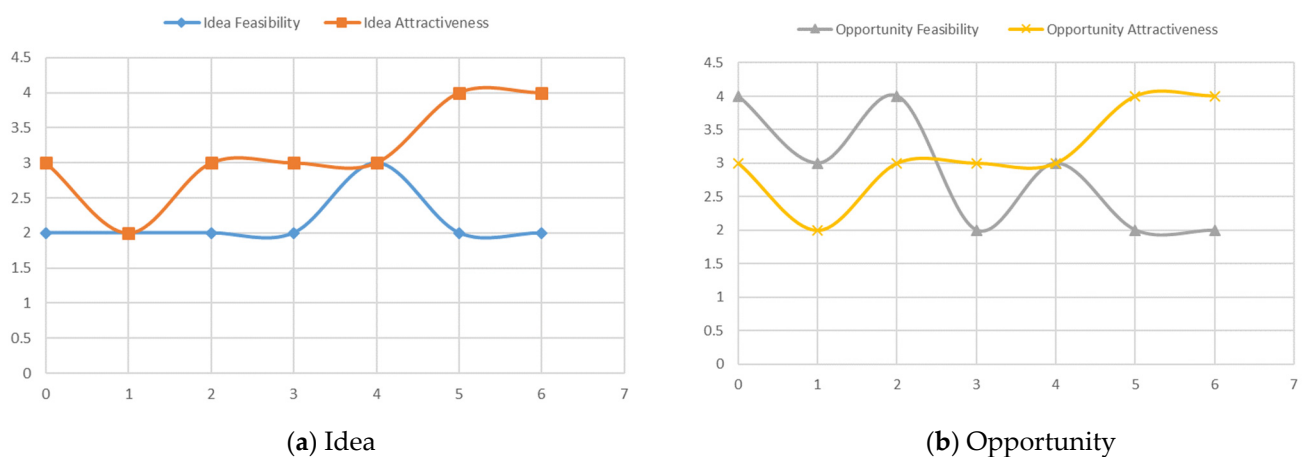
Another example is an idea regarding legal service for supporting entrepreneurs. While the business idea was originally a product/service idea (legal advice) primarily, in the course of entrepreneurial learning it was changed within the context of venture launch. Often, this does not mean such a change of formulation. For example, if the idea was originally a consultation, then during the course a company had to be designed to provide this service (using an online business model). In the first example, Cat Cafe already included the form of its implementation in the original (venture) idea. The second (consultancy) case involved a major transformation of the idea before becoming a venture idea.

At the same time, opportunity was the more variable phenomenon. During the journey (of home task development) the understanding of opportunity was changed strongly in some cases. In the case of Cat Cafe, opportunity was changed, including way of funding, marketing strategy and target audience. We can observe the same approach in the case of the online legal service, where the opportunity was changed, including the targeting and business model, among others.

As long as the idea–opportunity fit could only be achieved with opportunity-based transformations, there was no reason to significantly re-evaluate the idea during the course. It can be interpreted that student entrepreneurs were emotionally related to their idea more than to the opportunity to realize it. However, it can also be a sign that in a relatively short period of time, learning cycles are fewer and shorter than when starting a real business. The comments by student A during the interview in the next subsection characterize the whole process in more detail.

#### 4.3. An Explanation of Fluctuations Based on the Interview

In addition to regularly asking for assessments during the course, postcourse interviews were used to find out the reasons for fluctuations in the perception of feasibility and attractiveness of the idea and the entrepreneurial opportunity. The dynamics of the perception of own idea and the entrepreneurial opportunity to implement it by student A are presented in Figure 5.



**Figure 5.** Dynamics of perception of (a) idea feasibility and attractiveness and (b) opportunity by student A along the entrepreneurial journey on Likert scale 1–5 (min-max). Checkpoints 0–6 correspond to Table 1.

An in-depth interview was used to collect data about the cause of fluctuations. The main aim of interviewing was to gain insights into the reasons behind the fluctuations and the changes of artifacts. The following outlines the observations with comments of student A presented by variable:

*Idea feasibility.* The student estimated the feasibility of an idea at the beginning of the course as 2 points, and the estimation was stable during stages 0–3. From the explanation of the student, it is clear that he was not very confident initially regarding the implementation of the idea in real life. The same perception remained stable during stages/checkpoints 0–3. However, the perception was raised at checkpoint 4 (topic of the course ‘Bring the Idea into the Market’). The student noted that thinking about the market made him optimistic and confident, while in the previous stages, the idea realization seemed ‘fantastic; however, I understood that there is a free market niche, and the idea is not as trivial as I thought before’. At checkpoints 5 and 6, perception decreased, mainly due to the essence of topic 5 ‘Define Capital Needs and Get Funding’. ‘I realized that despite being a good idea, the competition for funding is very very tough, and the risk of bootstrapping is high’.

*Idea attractiveness.* Student A remarks that the idea was attractive for him before the course: ‘I was not sure how to effect the opportunity and implement it; however, the idea seemed attractive, I liked it and I thought that I would like to have such a startup’. Checkpoint 1 (‘Idea of Startup. Idea and Reality’): the perception of attractiveness decreased: ‘I compared my idea with other students’ ideas and I began to feel like it was too simple; additionally I had bad personal news and was upset’. Overall, it was the only one negative fluctuation in the perception of idea attractiveness; after this checkpoint, the

perception went back to the initial perception level (checkpoints 2–4: ‘Scan Environment, Protect Idea, Bring Idea into the Market’). Checkpoint 5 (‘Define Capital Needs and Get Funding’) was a trigger for idea attractiveness perception raising: ‘on the one hand, it is difficult to get funding; however, it is more or less realistic. I understand how to apply for funding, and there are many opportunities to do this’. At the last checkpoint, checkpoint 6, the perception was stable and did not fluctuate in comparison with the previous checkpoint. ‘During the course, I perceived the idea as more attractive than at the beginning. I understand the process, all parts of the journey, and yes, it is even more attractive’.

*Opportunity feasibility.* First, we can see that the student perceives idea and opportunity as two very separate phenomena; the estimations of opportunity and idea attractiveness are very different. The student explained that, ‘idea for me is a general view, the essence of a future new venture. Opportunity is more real; it is more about real life, competition and market conditions’. Second, the perception of opportunity attractiveness is not stable, and we observe fluctuation at almost all checkpoints. Third, the perception of opportunity feasibility mostly went down. The student noted: ‘Before the course I was optimistic, as I do not know much about entrepreneurship. At the first checkpoint, I didn’t feel confident; I saw other students’ opportunities, and I began to understand that entrepreneurship is very complicated. When I started to scan the environment (checkpoint 3) I realized that my idea was not very new; however, I [still] perceive the opportunity of implementation to be very realistic’. At checkpoints 5 and 6 (‘Define Capital Needs and Get Funding’ and ‘Few Minutes Can Define Your Entrepreneurial Journey’), the perception decreased ‘I feel that the financial issue is . . . I don’t know I just loss confidence’.

*Opportunity attractiveness.* The attractiveness decreased only once at checkpoint 1, ‘Idea of Startup. Idea and Reality’; as we can see from the previous comments, the main reason was a comparison of own opportunity with the opportunities of other students. Then (checkpoint 5), perception of opportunity attractiveness increased; the student perceived that opportunity as being very realistic—the new venture ‘can be implemented and become reality’. There is a certain contradiction in this development (the feasibility of the entrepreneurial opportunity decreases, Figure 4b), overcoming which will require a great commitment from the student entrepreneur. It is interesting to note that the attractiveness of the opportunity for student A developed in sync with the attractiveness of the idea; i.e., the affective perception of both aspects was similar. We do not observe the same in other students.

The interviews revealed that the reasons for changing the perception and assessments of an idea and an opportunity are very individual throughout the entrepreneurial (learning) journey. They depend on the correspondence between the business idea and the opportunity in the light of getting to know the customer, the environment and the market, as well as understanding the need for resources. Each subsequent assessment changed when a previous problem was resolved or when an additional positive circumstance emerged. The case of student A demonstrates how growing competencies generally, and specifically about own venture creation, influence the assessments of key topics of the idea and the entrepreneurial opportunity.

## 5. Discussion

A real-time study conducted in parallel with the entrepreneurship training process reveals details that were not previously identified during courses based on the entrepreneurial process or its simulation. We observed the relative stability of the content of the idea, while the student reformulated the entrepreneurial opportunity in the course of getting to know it better. With it, he/she also better adapted his/her idea to the real environment. The complexity or simplicity of the idea, compared to the already existing products and services, played an important role in this. Compared to some of the more technologically complex realized cases (Mets 2018, 2021), where the idea changed almost beyond recognition within several years, the current entrepreneurial learning journeys were significantly shorter in



time (only four months). Thus, simulation-based training is completed in a smaller number of learning cycles than in the real conditions for the entrepreneur. However, this does not mean that entrepreneurial learning in both real and simulated entrepreneurial processes during the first cycles within our study was different in essence.

It is remarkable that the simulation of the entrepreneurial process through the educational process using mixed research methods helped to detect real-time perception and its fluctuation patterns. It is a significant advantage of the observation, since it is impossible to gauge real-time perception in many other methodological approaches, such as a pure case study, because of the limits of information sources. Ultimately, this provides the answer to one of the research questions—the results show that fluctuation occurs in real-life processes even more frequently than previously observed.

'Idea' and 'opportunity' are subjective and dynamic constructs. Perception depends on the affective component in many regards. Thus, opportunity and idea perception is unstable; it changes depending on the entrepreneurial journey stages. It is worth mentioning that simulations of the entrepreneurial process in the training environment are practically devoid of the impact of context, external factors that usually influence entrepreneurs in a real-life entrepreneurial process (for example, the student did not yet need to raise investments). Thus, the process-based entrepreneurship training includes conditions that help exclusively assess the impact of affect.

The results (trajectory patterns, Figures 2–4) demonstrate perception fluctuation in all of the cases at different stages of entrepreneurial journeys. The results show very clearly that perceptions of both idea and opportunity are not stable, even when we exclude the influence of some of the external factors. There is generally no pattern match between different students or between individual student assessments of their idea and opportunity. This does not allow for a generalizing model to be developed on the basis of the current results; only preliminary generalizations are possible. It allows us to conclude that perception is under the influence of affect caused by the individual context of the entrepreneurial journey. According to the results, in each of the cases, perception of the initial idea, its feasibility and its attractiveness are unstable. Affect stipulates fluctuation in idea and opportunity perception. At the same time, idea and opportunity perception are not closely connected; for instance, opportunity perception might become more optimistic, while idea perception might become less so.

The perception of idea and opportunity are very individual, as we can see from Figures 2–4. However, the general point is that the assessment of perception of the idea and opportunity together with competencies mostly increase during the process-based training (Figure 1), which supports the conclusion about the growing competence of the former studies (Mets et al. 2017; Kozlinska et al. 2020). Mostly, the student's perception becomes more positive in both dimensions of feasibility and attractiveness. Nevertheless, exclusions can become apparent due to particular reasons (doubts about the possibility of financing, although the business opportunity seems attractive—the case of student A). In discussing opportunity and idea interconnections, we should note that the trajectories of these two constructs are developing seemingly undependably. We noticed the student's attempt to stick to his/her idea and adapt the opportunities to use it.

The results facilitate yet another important conclusion. The assessments of student entrepreneurs of their business idea and entrepreneurial opportunities are not constant; they change over time depending on the entrepreneurial learning journey and the competencies/skills learned on that journey. Fluctuations in perception and assessment manifest themselves in students' self-reflective affective decisions about the attractiveness of an idea and opportunity, as well as more objective learning-based assessments of the feasibility of the same indicators.

The synchronicity and direction of fluctuations in the assessments of subjective and objective aspects in decisions about one's business idea and opportunities depend on the development of the entrepreneurial journey. Objective barriers and enablers of the en-

trepreneurial journey can both raise and lower the affective assessment of the attractiveness of one's own idea and opportunity, depending on the context.

Fluctuations are observed not only within an entrepreneurial journey in one case, but also between cases (persons). Thus, we see different cases with absolutely different idea and opportunity perceptions. We suggest that the idea transformation depends on the complexity of the initial idea. When the primary idea is a simple venture idea, it may stay stable. In the case of a complex, knowledge-based initial idea, the transformation process can be radical, and the distance between initial and venture ideas may be much bigger. In addition, cases' pattern comparison highlights differences in fluctuations, dynamics and directions of changes.

Fluctuations in business idea and opportunity assessments during the entrepreneurial journey are individual and depend on the competencies implemented at the respective stage of the journey. Although the estimates show an overall upward trend, various factors may lead to a decline in individual indicators at a specific moment. This also partly explains the emergence of negative assessments of competencies in a larger sample (Mets et al. 2020).

In comparing the entrepreneurs' assessments of the new venture's maturity identified based on the case study data (Mets 2018, 2021), similar fluctuation patterns appear in the conditions of the controlled learning course that simulate the entrepreneurial process generally and in detail. This is further proof that a startup entrepreneur must be prepared for obstacles and affective self-reflective perceptions and decisions due to factors of both an objective and subjective origin.

## 6. Implications and Limitations

The application of the findings of this article and their discussion in entrepreneurship and entrepreneurship education research requires a consideration of limitations. These limitations are related to the short period of the study, the methodology, the sample size and the possibilities of simulating the entrepreneurial process in entrepreneurship training.

Starting with the study period, as noted above, the 4-month course does not allow students to go through the whole process of starting a business from the initial idea to venture launch. Therefore, only part of the entrepreneurial journey can be covered during the training period. Students do not experience all the aspects of a start-up within a limited time, especially in more complex businesses.

While for some students, training can also involve starting their own business, for many it can be just a learning task. In the latter case, the student's motivation and behavior may differ from that of the entrepreneur. In the current study, we did not have the opportunity to verify this. Consequently, it is necessary to seek confirmation of the affective fluctuations associated with the idea and the opportunity in the actual entrepreneurial process when completed. This is in a situation where the idea–opportunity fit has been realized. We have come to a similar conclusion about the synchronism of the development of an idea and an opportunity. The asynchrony of the idea–opportunity needs to be confirmed in the real completed venture creation process.

The sample (3–7 individuals in different cases) is suitable for case study and qualitative comparative assessments. The patterns of time series (trajectories) of the individual self-assessments obtained in the initial phase of the entrepreneurial process clearly show the problems in determining the causality within the process. Overcoming this challenge could be the goal of planning future studies, as this will allow the quantitative measurement of the relationships' strength between measurable variables on the basis of significantly larger samples.

This study showed more frequent affective and perceptual fluctuations in the entrepreneurial learning process than previous studies (Mets 2021; Su et al. 2020). The lack of a uniform pattern match for this phenomenon points to the need for a more in-depth examination of the underlying factors referred to in Section 5. However, this involves seeking causal explanations in subsequent entrepreneurial process and journey studies using qualitative methods and relationship studies using quantitative methods (McMullen

and Dimov 2013). The practical contribution of this research is the opportunity to use the research results in the educational process, including in entrepreneurial courses. Firstly, it is extremely important to take into account the influence of affect, as a factor influencing the perception of the course, on the development of a business idea. Secondly, it is important to explain to the students themselves that their perception not only changes under the influence of rational factors. Thirdly, in entrepreneurial courses, it is important to track the dynamics of the development of ideas and opportunities and invite the students themselves to keep a diary of changes.

## 7. Conclusions

A special feature of this study was the simulation of the entrepreneurial process during an educational intervention at a university. The process-based entrepreneurship course was attended by students who are highly motivated to become entrepreneurs or/and learn entrepreneurship. The development of their business ideas had obstacles similar to any other nascent entrepreneur. The progression of their entrepreneurial journey followed ups and downs, which manifested in fluctuations in the perception and assessments of student entrepreneurs regarding their ideas and opportunities during the entrepreneurial journey. The article contributes to entrepreneurship research in general and to the research and development of entrepreneurship education. Despite the limitations of this study, the following conclusions summarize the main contribution of the article, which also initiates topics for further research and challenges:

- The training course following the entrepreneurial process shapes the student's experience related to the entrepreneurial journey together with the corresponding affective (emotional) developments, which creates several affective artifacts within the single stage of the entrepreneurial process. This study also shows that fluctuations of emotions/affection and related perception of progression by an entrepreneur are a natural part of the entrepreneurial journey.
- Although assessments of one's business idea and entrepreneurial opportunities are increasingly positive throughout the progression of the entrepreneurial learning journey, there are strong fluctuations, both positive and negative, as additional information emerges and entrepreneurial skills grow.
- Fluctuations' asynchrony in perception of one's own idea and opportunity attractiveness and feasibility are very individualistic depending on the context and progression of the entrepreneurial process and journey. The reassessment of an entrepreneurial idea and opportunity is accompanied by the progression of the entrepreneurial process and journey, which is marked by successive artifacts appearing as the outcome of each stage/phase of the (sub)process.
- This study reveals a new generalized presentation (of the part) of the entrepreneurial journey in the respective affection dimensions. At the same time, the feasibility of the idea and the entrepreneurial opportunity can be independent dimensions characterizing the entrepreneurial process and journey, but they can also be a part of, for example, the venture maturity dimension of the startup. In addition to addressing the entrepreneurial process and journey as a sequence of stages and artifacts (Mets et al. 2019), the article shows the appearance of perceptual and affective artifacts in the entrepreneur during this journey. In this way, the article enriches the approach to the entrepreneurial process and journey for further research.

The recommendations for entrepreneurship education stem from the above. The effectiveness of a practical (simulated) entrepreneurial process orientation learning/training can be increased by preparing the student to be a startup entrepreneur within the specifics of the entrepreneurial process and journey. This means increasing the readiness for affective ups and downs during the entrepreneurial (learning) journey. It is a vital conclusion that students/entrepreneurs should clearly understand that fluctuation of the perception can be very much influenced by affect.

However, it also relates to guidelines on how to avoid clinging to one's own idea and flexibly adapting 'idea–opportunity' relationships throughout the entrepreneurial learning journey. Our study showed that already in the initial phase of the learning process it is necessary to give an understanding of the nature of the idea and the way in which the venture idea develops. This would also be a topic for future research and training methodology development.

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#### Appendix A. The Sample (Participants of the Entrepreneurship Course)

PhD Student	Age	Study Field
Student A	30	Economics
Student B	43	Media and Communications
Student C	28	Economics
Student D	27	Economics
Student E	31	Computer Science
Student F	32	Technology Management
Student G	48	Computer Science

#### Appendix B. Questions of Observation

1. How feasible is your idea? (your perception)

- 1 not feasible
- 2 the level of feasibility is low
- 3 the level of feasibility is medium
- 4 the level of feasibility is high
- 5 absolutely feasible

2. How attractive is your idea? (your perception)

- 1 not attractive
- 2 the level of attractiveness is low
- 3 the level of attractiveness is medium
- 4 the level of attractiveness is high
- 5 absolutely attractive

3. How feasible is your opportunity? (your perception)

- 1 not feasible
- 2 the level of feasibility is low
- 3 the level of feasibility is medium
- 4 the level of feasibility is high
- 5 absolutely feasible

4. How attractive is your opportunity? (your perception)

- 1 not attractive

- 2 the level of attractiveness is low
- 3 the level of attractiveness is medium
- 4 the level of attractiveness is high
- 5 absolutely attractive

1. Name (first name and family name or student code)

2. Your age

3. Study field

4. Do you have a regular job alongside your studies?

5. Have you thought about starting your own business or doing business?

No, never

Yes, I have decided to become an entrepreneur in the future

Yes, I've already started a business

Yes, I am already an entrepreneur and operate at least one company

I have never been an entrepreneur.

6. If you are or have been involved in business, please describe the form of activity. You may choose a few answers.

Volunteering

Study related (e.g., student company)

Business activity (and/or preparation)

Participation in non-profit organizations

7. Are your parents currently self-employed or have they been previously?

Yes

No

8. Do you have other family members (siblings, grandparents, etc.) who are self-employed or have been previously?

Yes

No

9. Do you have close friends who are self-employed employed or have been previously?

Yes

No

10. Please mark with a cross that which best represents you below (multiple answers possible).

I have not (to date) taken a course in entrepreneurship

I have previously attended at least one entrepreneurship course

In upper secondary school/vocational school

In-service training

I study under a special entrepreneurship curriculum

### Appendix C. Questions for the Interview

1. Did your estimation of idea feasibility change during the course and why? Can you identify the triggers for this change?

2. Did your estimation of idea attractiveness change during the course and why? Can you identify the triggers for this change?

3. Did your estimation of opportunity feasibility change during the course and why? Can you identify the triggers for this change?

4. Did your estimation of opportunity attractiveness change during the course and why? Can you identify the triggers for this change?



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