



Developing Impactful Entrepreneurial Teaching Using A Business Model Framework

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Abstract

This paper provides insights regarding the development, structure and results of the entrepreneurial course “New Venture Creation”. The course engages with the Business Model Canvas and the Lean Start-up Methodology but modified to encompass a Higher Educational Institution’s demands, which has shown positive results among students, external stakeholders, and incubators.

Introduction

Entrepreneurship is considered one of the most important topics at universities worldwide (Robinson and Heynes, 1991). There are many reasons for including entrepreneurship teaching in the study curriculum (Hindle, 2007). These reasons include students obtaining skills, such as communication, fostering new ideas and collaboration, which are highly valued by employers (Al-Atabi and DeBoer, 2014). Entrepreneurship teaching can enhance entrepreneurial skills, such as handling novel situations, working with others, perseverance in situations of failure, idea generation and many others, but developing these skills requires effort and support (Nadelson *et al.*, 2018). Research has shown that such skills can be developed through instruction (Mansfield

et al., 1978); i.e., it is possible to teach entrepreneurial skills (Rodov and Truong, 2015).

In recent years, entrepreneurship teaching has evolved from a business plan-centric understanding (start-ups as smaller versions of a large company) towards a business model-centric understanding (start-ups need new management tools for search and discovery) (Blank *et al.*, 2014). At Aalborg University (AAU) in Denmark, the course “New Venture Creation” (NVC) aims to teach entrepreneurial skills using a business model (BM) framework in a practical and applicable manner. The course builds on the foundation of the Lean Start-up Methodology, as first developed by Ries (2011), and follows the step-by-step guide for building a great

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company by Blank and Dorf (2012). This guide structures the entrepreneurial process around the Business Model Canvas (BMC) developed by Osterwalder and Pigneur (2010). Together with the Lean LaunchPad (Blank *et al.*, 2014), these ideas and frameworks have provided a starting point for the NVC course, which has been continuously modified over time based on new learnings and understandings.

NVC is a semester-long cross-university 30 ECTS elective course at master's level, offered to students following various study programs from all AAU faculties: humanities, social sciences, engineering and medicine. The course has become one of the main pathways for new entrepreneurs entering the AAU Incubator programs. Moreover, external stakeholders - such as investors, entrepreneurial consultants and innovators from established companies - reviewing the course have recognised that it is developing sound and validated business ideas and entrepreneurial talents worth investing in. Some of the student projects developed through the course turn into businesses that make their first sales already during the course and others after the course is finished, meaning there are concrete entrepreneurial outcomes.

This paper synthesises over seven years' experience of initiating, developing and teaching the course and provides the insights and results in the following sections. After the general approach is described, some of the key insights are highlighted. Finally, some pros and cons will be discussed and concluded in the final section.

Approach

The NVC course is based on the understanding that a start-up is "a temporary organisation in search for a scalable, repeatable, and profitable business model" (Blank and Dorf, 2012, p. 24) that moves quickly from failure to failure while adapting, testing new iterations, improving initial ideas and learning from customers. The course is designed to support students in the process of searching for a repeatable and scalable business model related to an idea or opportunity that originates from a problem. The ambition is that the students go through the entrepreneurial process of starting a

company by developing a business model through careful market validation during the semester-long course.

The course has developed further from its original sole focus on Blank and Dorf's (2012) "how-to guide", to include other important aspects, such as problem generation, team formation and creativity, which happens before to the structured approach proposed by Blank & Dorf (2012). The reason for this change is that most similar educational hands-on entrepreneurship courses, for example "The Lean LaunchPad" (for students) and "I-Corps™" (for companies) (Blank *et al.*, 2014), only enrol teams that already have a start-up idea, while the NVC course allow all students interested in entrepreneurship to register. Also, the development of the course has led to springboard sessions and learning reports to align with university requirements, which will be explained in more detail below.

The NVC course has the following structure: first, an introductory three-week boot-camp provides the students with an entrepreneurial and creative toolbox as well as supports the subsequent team formation process. Subsequently, the course follows a 10-week business model process concurrent with a customer development process (see Blank and Dorf, 2012). The overview of the structure and class flow are presented in Table 1 and Figure 1 below. Table 1 presents an overview of the themes during the NVC course, while Figure 1 illustrates the weeks' structure.

In Figure 1, the blue areas are marked as the days the students need to be in class or at supervision. It is highlighted that in the boot-camp weeks, the students should attend the class every day (coloured

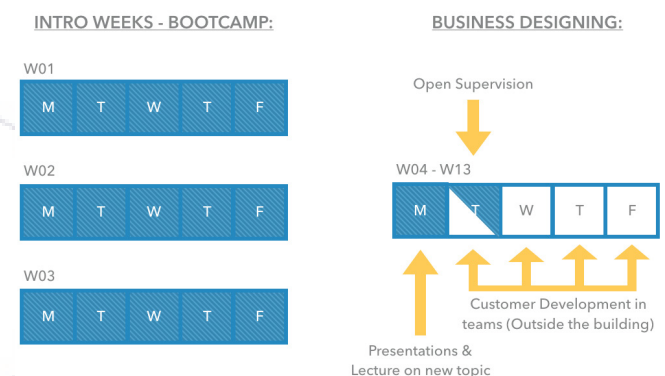


Figure 1:

Focus	Week no.	Theme
Introduction	1-3	Boot-camp
Business Designing	4	Customer Segments: understanding customers, customer profiles, customer archetypes, identifying customer pains/gains
	5	Value Proposition: how to design a compelling value proposition, product & service features, gain creators, pain relievers
	6	Product-Market Fit: prototyping, minimum viable product, creating a fit between customers and the value proposition
	7	Channels: channel-customer fit, channel economics
	8	Customer relationships: how to get, keep, and grow customers
	9	Revenue streams: revenue model strategy, pricing tactics, customer feature and price sensitivity
	10	Key Activities / Key Resources / Partners: partner-resource/activity fit, company architecture, most important resources and activities
	11	Cost Structure / Operational Plan, Fundraising: financial forecasts, budgeting, fundraising
	12	Pitch training
	13	Springboard (external evaluation)
Reporting	14-19	Learning report

Table 1: Overview of the themes for each week

blue). Following the initial three weeks, the students give presentations each Monday as well as attend a lecture on the new topic (the topic being the theme described in Table 1). Furthermore, they set aside time for a supervision meeting each Tuesday. In contrast, the rest of the week is reserved for the students to do customer development by “getting out of the building” and start talking to potential customers, thus getting evidence from the market related to their entrepreneurial endeavour. The term customer can include all types of stakeholders such as customers, users, channel partners, suppliers, domain experts, and sometimes also competitors.

From week two, students are required to identify and talk to the first potential customers, called early evangelists (Blank, 2020). From week four, the students need to validate business model assumptions by interviewing¹ 10–20 potential customers a week. The interaction with customers ensures market engagement and improves BM experimentation, as suggested by

¹ Interviews are the standard method in this course because we want the students to really understand the problem by talking to the people experiencing the problem (“the customers”). Later in the process, the students can use questionnaires to test their assumptions at a larger scale.

Zalejska-Kurek *et al.* (2016). Assignments related to the BM-themed lectures, the idea development and the customer feedback obtained during the week are presented during the Monday presentations.

Boot-camp weeks

The first boot-camp week is dedicated to teaching the students about the key concepts of the course, which includes entrepreneurship theory, introduction to Lean Start-up Methodology, BMs, the BMC, as well as methods such as (customer) interviews. These sessions are usually structured as traditional class lectures with small workshops to discuss and apply some of the aspects of cases. The Lean Start-up Methodology sessions follow the first chapters of the book by Blank and Dorf (2012), and the BM/BMC lectures follow the Osterwalder and Pigneur (2010) book but modified with new (local) cases and problem-based learning (see Sort and Brøndum, 2021, for examples of this). The first week’s aim is for the students to understand how the course is structured, especially because it is very different from most other teaching environments where students are trained to find “correct answers” and where failure is frowned upon (Beghetto, 2010). At the NVC course, failure is a requirement and seen as a valuable learning experience.

In the second boot-camp week, creativity is the focal point. Inspired by Parnes (1992), Amabile (1988) creativity theory, process methods and training are introduced. While the general introduction into creativity theory is important from a theoretical perspective, this week is also about hands-on approaches. As many students do not have a business idea or problem to work on from the beginning of the course, the second week allows them to generate ideas and identify problems worth solving in a creative manner.

At the end of the second week, the students should have developed a portfolio of different problems that could be interesting to explore further. In the third week, students vote for the problems they find most original and promising. This selection process keeps the motivation as high as possible, as students are allowed to follow their own interests, which is also suggested by Amabile (1988) and Aulet (2013). Working with a smaller portfolio of problems, the students go through a facilitated process to select a problem to focus on for the rest of the course and form teams.

Entrepreneurial teams are one of the cornerstones of NVC, as studies have shown team-based start-ups tend to be more successful (Aulet, 2013). We facilitate this process and encourage the students to form groups with team members from different study areas so they have a diverse set of theory, experience and background. After team mobilisation, the third boot-camp week involves further lectures and workshops on framing their chosen problem in a BMC and finding and interviewing their first potential customers.

Weeks 4-13

The fourth week marks the beginning of the course structure illustrated on the right in Figure 1. The week begins with a 10-minute presentation from each student team, followed by 10 minutes of feedback from the supervisor and fellow students. Afterwards, a lecture provides a new BM theme for the teams to focus their attention on in the following days. These lectures consist of conventional teaching combined with workshop-based teaching, where the students get to apply some of the theories and frameworks on their project. The combination of lectures and workshops has shown to give the students a great understanding of the theme they need to investigate further that week and

speeds up the learning curve as the lecturer is available to support the process during the workshop. The rest of the week is dedicated to team-based customer development activities outside the classroom (interviewing ten or more potential customers) and supervision meetings (if needed).

Weeks 5-11 follow the same structure as week four, with student presentations, a lecture and workshop, supervision, and team-based customer development. However, as shown in Table 1, week 10 focuses on multiple BM themes related to the infrastructure of the business idea. We have merged these themes into one because students find it hard to distinguish between key resources, key activities and key partners across separate weeks, as they are interconnected. Week six also deviates from the BMC building blocks and focuses on the fit between customer segments and the value proposition. Here, we elaborate on some of the key aspects of the Lean Start-up Methodology, including minimum viable products (MVPs), prototyping and feature testing with customers, which we have found warrant further attention. At the end of week 11, the student teams have gone through all of the building blocks in the BMC and simultaneously developed a comprehensive and validated business prospect through the customer development process.

During each week, the students have practiced their presentation skills, but in week 12, we change the perspective from “lesson learned” presentations (cf. Blank & Dorf, 2012) to actual “business pitching”. This change of perspective is done for several reasons but predominately because the students have to pitch to an external “springboard” in week 13, where the pitch should be convincing, to the point and persuasive. At this point, most students are ready to talk to potential investors and other stakeholders, so a good business pitch is essential. The week is thus dedicated to creating, refining and rehearsing the “perfect” pitch.

Week 13 marks the official end of the “business designing” part of the course and initiates the “validation” part of the course. The validation phase typically includes more than 100 customer interviews, although often, the number is closer to 200. In this phase, the students are also allowed to do questionnaires to test their business hypotheses on a larger scale.

The concluding “pitch day” is normally structured with two consecutive rounds of pitches. Every team is expected to do a pitch in front of an internal evaluation board, consisting of the involved supervisors and lecturers. The internal evaluation ends with the supervisors picking the teams that have “qualified” for the afternoon session. The later round of pitches is done in front of a board of external evaluators, called external springboard, consisting of one or two business angels or private investors, one or two corporate investors (typically from large companies in the region) and one representative from the AAU incubator programs. The external stakeholders provide feedback to each team after their pitch, followed by a round of Q&A's. In the end, the external springboard selects the “best performing team” based on an evaluation form developed by the faculty².

Following week 13, the students have to write a learning report, which they hand in at the end of the course. We require a written learning report because most universities cannot (and probably should not) base an examination and grade on an entrepreneurial endeavour's success or failure, particularly as 9 out of 10 start-ups fail within five years (Chakrabarti, 2017).

The learning report consists of a theoretical and method section, where the students have to identify and describe the main theories and methods applied. Following this, the students have to reflect on the three major changes during the process known as “pivots” (cf. Ries, 2011; Blank and Dorf, 2012; Blank *et al.*, 2014). The learning report gives the students an opportunity to reflect on the empirics they have collected during the customer development process, what they learned from the pivots they experienced, how they progressed in terms of the BM development as well as learning process, based on theory and empirics. In the next part of the report, the students have to assess their final business model and its viability using the terms from Lean Start-up Methodology (not to evaluate the economic potential, but their learnings and ability to apply the theory). Finally, the students have to discuss and

make conclusions on their significant learnings and how they will continue after the course both on a business and personal level.

The role of the teacher, supervisor and externals

Different people engage with the students in different roles during the course. The teacher's primary responsibility is to give the lectures, which means running class each day in the boot-camp weeks and every Monday in weeks 4–13 (see Figure 1). The general ambition is that the teachers give a traditional lecture and facilitate workshops with the students where they apply the new insights they learn from the lectures. Since application of knowledge is one of the main foci in this course, the workshops are valuable to help and enable the students.

Key Insights

Separation of business pitch and learning report is a must

The NVC course has evolved over the last seven years. One of the main issues with practice-oriented entrepreneurship courses is the conflict between creating hands-on learning and starting a viable business while still fulfilling traditional universities' requirements regarding theorizing, applying methodology, examination, and evaluation. During the first iterations of the course, the students were required to write a report explaining the business idea and their learning experiences. Students were often confused about why the oral examination was mostly related to theory, method and learning outcomes rather than the business they spent so much time developing during the course. The separation of the business pitch and learning report was intended to address this confusion and better align with the university's requirements, which has proven successful in the latest feedback we have received from the students.

External stakeholders and springboards are valuable

Including an external springboard as part of the concluding “pitch day” is an exciting way for the students to get further inspiration from others than their supervisors and lecturers. Moreover, the students typically enjoy this opportunity to pitch in front of real investors and high-ranking executives. Both the students

² In the last few years, the evaluation criteria has been the following: 25% innovation (uniqueness, need, business idea, pain), 25% verification (value, research, market, cure), 25% business (business concept, proof of ..., team, profit), and 25% convince (desire, potential, strategy, persuasion).

and the course, in general, have received very positive feedback from the external stakeholders. The Head of Innovation at Aalborg University has stated that *“The NVC course is providing some of the best entrepreneurs into our innovation programs with the students having strong concepts and very developed entrepreneurial competencies.”* The involved investors attribute this to; firstly, they have been impressed by the high number of validations and BM experiments each team has done and, secondly, the student’s insights towards their potential BM. Over the years, we have found that inviting external stakeholders into the course has provided several valuable outcomes and, indeed, worked as a launch pad for the students. Not only have students ended up being employed by some of the investors. Several teams have secured early-stage funding for their entrepreneurial concept and some of the involved investors have invited teams into their professional network for further development of the idea.

Students change perception

At the beginning of the course, the main barrier for students is the customer development part, where the students have to validate the market by interviewing potential customers, partners, suppliers, and domain experts each week. Most students are somewhat fearful of this requirement from the outset and try to figure out ways to avoid it. By the end of the course, it is quite interesting that the customer development process is evaluated very positively by the students, as they come to appreciate the skills they have developed by interacting with potential customers each week. In post-evaluations of the course and after talking to many of the previous enrolled students after some years, students state that these skills have helped them in their final courses and onwards. For example, in the application process for their first job and in their everyday professional life as an employee.

The BMC has limitations – flexibility and creativity is needed

To a large extent, the course flow (from week 4 to 11) follows the building blocks of the BMC as described by Osterwalder and Pigneur (2010). Structuring the course around the building blocks of the BMC has some obvious strengths, as it is a very generic framework and “easy-to-use” tool. On the other hand, the genericness

of the BMC is also a drawback. We found that flexibility is needed depending on the different settings of the student projects. Furthermore, we found that using the BMC together with the Lean Start-up Methodology limits creativity due to the prescribed structure and analytical model. This is in line with the criticism raised in the study by Bocken & Snihur (2020). As such, we will shortly address how the NVC course has addressed some of these considerations in the below.

First of all, the BMC is generally developed to analyse and innovate existing BMs, not BM for start-ups. Blank & Dorf (2012) made some changes to the original canvas to facilitate this. For example, early evangelists and customer archetypes are the focus in the customer segments building block; the channel building block is about finding the right product-channel fit; the customer relationship building block focuses on how to get, keep, and grow customers; the revenue streams building block also includes pricing tactics. Even with these small iterations, we found that the BMC still does not fit all start-up ideas. Some of our social enterprise or non-profit teams has ended up using the “Social Business Model Canvas” and teams wanting to start a platform business sometimes use “The Platform Business Model Canvas” as their reference framework during the course. These other frameworks can bring more value for some teams, but the teaching flow still follows the BMC for practical reasons.

Furthermore, we introduce the creativity training during the bootcamp weeks to stimulate the creative flow and develop the students’ creative competencies. We have done this to counterweight some of the criticism of the Lean Start-up Methodology being too structured and hindering creativity (e.g., Bocken & Snihur, 2020). From our experience, introducing creativity training has been a success, as the students reflect on their use of creativity as part of their learning report and how this complements their customer discovery iterations with new insights. For example, the students use some of the creativity techniques to get new ideas on how to use customer feedback to improve their entrepreneurial idea, how to approach customers in a creative way, how to persuade customers more, and how to create the best way of testing a hypothesis as part of the customer discovery.

Supervisors should be flexible and change roles

From a teaching perspective, it is essential that the supervisors also allow room for failure and accept that these “errors” will actually turn into new learnings, which will enhance the students’ understanding and process. We have found that the supervisors should play the role of “process” supervisors in the first 13 weeks, with a strong focus on business development aspects, guiding the students in new (original) directions and pushing them outside their comfort zone. Supervision meetings in these weeks are more focused on co-creation activities than traditional supervision. During the co-creation, it would be natural for the supervisor to follow-up on the theories and methods leading to the business development, so the supervisor indirectly helps the students reflect upon their process, which is an integral part of the co-creation activity. In the final weeks (14–19) of the course, the supervisor’s role changes into a more “normal” academic supervision role, where the focus is on the written report. Even though the supervision approach is different, we have seen that the more we push and encourage the students during supervision meetings, the better the performance.

Strive for interdisciplinarity

Our experiences have also shown that the best performing teams (both on the business and learning part) are multidisciplinary teams. By having a different set of competencies, the student teams see problems and opportunities from various perspectives, which enhances the end-result. However, this also poses the greatest challenge for an interdisciplinary, cross-university course like NVC; it requires a flexible university structure. Students should be allowed to realise their ambition by participating in courses relevant to their future careers and courses that motivate them. Nevertheless, many universities reproduce what is termed “silo-thinking” (Jeal, 2014), where information, economy and students are kept within each faculty without the possibility to attend cross-disciplinary courses. Hopefully, universities, faculties and departments can see the potential and impact made by a course like NVC and start opening up the silo-thinking for the better of the students.

Discussion and Conclusion

Following students both during and after the course has shown us that a hands-on entrepreneurial course, like NVC, strengthens students’ skills by enabling them to start their own businesses and become attractive employees for companies. In line with the findings by Al-Atabi and DeBoer (2014), the students attending the NVC course have been appraised during the business pitch for their strong communication skills and companies that have hired NVC graduates have reported back about the high innovativeness of these students. In general, the students with the entrepreneurial abilities provided by this course perform well in the talks we conduct with them and industry stakeholders continuously. Furthermore, the students have - both on a personal and professional level - learned how to adjust and overcome problems and find solutions to challenges faced both as an entrepreneur but also if employed in established companies, which should also be the advantage of such entrepreneurial skills, according to Nadelson *et al.* (2018).

A limitation of this approach is connected to the theoretical limitations found in the Lean Start-up Methodology. Questions remain whether this is most applicable to the domain of the existing market/new product quadrant of the Ansoff Matrix (Ansoff, 1957) and the existing product/new market quadrant. Further, the Lean Start-up Methodology shows some weaknesses when applied in the existing market/existing product quadrant and especially in the new market/new product quadrant. These concerns are mostly derived on a theoretical level where market knowledge equals full information. Our experience, however, shows that students often have limited knowledge about the existing market and products. Therefore, the approach is still applicable and entrepreneurial teams have found viable solutions in most quadrants over the years.

Creating and developing entrepreneurial teaching and a course like NVC has been an exciting journey. Initially, based on the Lean Start-up Methodology, this course has transformed into a versatile course that fits the HEI requirements. The structure of blended presentations, lectures, workshops, external activities, and

reflection through the final report, provides students with skills applicable in different educational and professional pathways.

We have applied the basic ideas explained in this paper in different settings. We have turned the whole course into a high-intense two-week process, equivalent to 3 ECTS. This short process has no written assignments, and the expectations regarding the number of customer interviews to be performed are lower than at the 30-ECTS version. Still, the students show a noticeable improvement in entrepreneurial skills from just two weeks of lectures, learning-by-doing, and presentations.

References

- Al-Atabi, M., & DeBoer, J. (2014), Teaching entrepreneurship using massive open online course (MOOC), *Technovation*, Vol. 34. No. 4, pp. 261-264.
- Amabile, T. M. (1988), A model of creativity and innovation in organizations. *Research in organizational behavior*, Vol. 10, pp. 123-167
- Ansoff, H. I. (1957), Strategies for diversification, *Harvard Business Review*, Vol. 35, No. 5, pp. 113-124.
- Aulet, B. (2013), *Disciplined entrepreneurship: 24 steps to a successful startup*, John Wiley & Sons.
- Beghetto R. A. (2010), Creativity in the Classroom, in Kaufman, J. C., & Sternberg, R. J. (eds.), *The Cambridge Handbook of Creativity*, Cambridge University Press, pp. 447-464.
- Blank, S. (2020), *The four steps to the epiphany: Successful strategies for products that win*, John Wiley & Sons.
- Blank, S., & Dorf, B. (2012), *The startup owner's manual: The step-by-step guide for building a great company*, BookBaby.
- Blank, S., Engel, J., & Hornthal, J. (2014), *Lean LaunchPad: Evidence-Based Entrepreneurship Educators Guide*.
- Bocken, N., & Snihur, Y. (2020). Lean Startup and the business model: Experimenting for novelty and impact. *Long Range Planning*, 53(4), pp. 1-9
- Chakrabarti, R. (2017), "#9 Out of 10 Start-ups Fail. Here's Why!" Available at: <https://www.entrepreneur.com/article/295798> (accessed 12 December 2018).
- Hindle, K. (2007), Teaching entrepreneurship at university: from the wrong building to the right philosophy, in Fayolle, A. (Ed.), *Handbook of research in entrepreneurship education, being competitive and successful*, Edward Elgar Publishing, Cheltenham, UK, pp. 104-126.
- Jeal, Y. (2014), Strategic alignment at the University of Manchester Library: Ambitions, transitions, and new values, *New Review of Academic Librarianship*, Vol. 20, No. 3, pp. 278-295.
- Mansfield, R. S., Busse, T. V., & Krepelka, E. J. (1978), The effectiveness of creativity training, *Review of Educational Research*, Vol. 48, No. 4, pp. 517-536.
- Nadelson, L. S., Palmer, A. D. N., Benton, T., Basnet, R., Bissonnette, M., Cantwell, L., ... & Lanci, S. (2018), Developing Next Generation of Innovators: Teaching Entrepreneurial Mindset Elements across Disciplines, *International Journal of Higher Education*, Vol. 7, No. 5, pp. 114-126.
- Parnes, S. J. (1992), *A source book for creative problem solving*, Creative Behavior Foundation, Buffalo.
- Ries, E. (2011), *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*, Crown Books.
- Robinson, P., & Haynes, M. (1991), Entrepreneurship education in America's major Universities, *Entrepreneurship Theory and Practice*, Vol. 15, No. 3, pp. 41-52.

Rodov, F., & Truong, S. (2015), "Why schools should teach entrepreneurship", available at: <https://www.entrepreneur.com/article/245038> (accessed 16 July 2018).

Sort, J. C., & Brøndum, K. (2021), Experiences from a Decade: A Universal Approach to Business Model Teaching, *Journal of Business Models*, Online First (2021), pp. i-x.

Zalewska-Kurek, K., Kandemir, S., Englis, B. G., & Englis, P. D. (2016), Development of market-driven business models in the IT industry. How firms experiment with their business models? *Journal of Business Models*, Vol. 4, No 3. pp. 48-67.