TOWARD AN ADAPTED BUSINESS MODELING METHOD TO IMPROVE ENTREPRENEURIAL SKILLS AMONG ART STUDENTS

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Abstract

This paper describes an initial qualitative exploration of an adapted business modeling method for entrepreneurship educational purposes in the Art & Technology program at Saxion University of Applied Sciences. This adapted method builds on the qualities of existing methods and adds specific elements to improve essential entrepreneurial skills. Using qualitative expert interviews and student panel discussions the six most essential entrepreneurial skills for Art & Technology students are determined. Subsequently, a selection of business modeling methods is evaluated on the extent to which they contribute to mastering these skills.

Introduction

The Netherlands has set 2020 as their target year to become the most creative economy in Europe. A leading innovative economy requires an ecosystem of creative talent with a seamless transition between the professional field of business and its source, the education system. Especially in art and design related education, entrepreneurship is key to this transition, since creative professionals often operate independently or in small and agile companies (Rutten, Amerika, Arets, Eggenkamp and Rietbergen, 2015). This requires courses to facilitate the development of entrepreneurial skills among their students, from recognizing opportunities and possibilities to marketing and validation.

This paper focuses on the development of entrepreneurial skills in the creative technologies domain, specifically in the Art & Technology program of the Creative Media & Game Technologies course at the Saxion University. Creative technologies is a new domain in the Dutch education system, in which several existing courses are merged and adapted to create a more seamless transition to a leading creative economy. The Art & Technology program in the course Creative Media & Game Technologies is centered on art, technology and human sciences. In the program, artistic qualities are applied to design innovate solutions for complex challenges in society. An entrepreneurial attitude and entrepreneurial skills are both viewed as core competences of the program. Graduates of Art & Technology are expected to start their own innovative companies or to start working as creative freelancers (Heeroma, Copier, Olde Hampsink, and De Serière, 2014).

Business modeling tools in the Art & Technology program

Several business modeling tools are currently used in the Art & Technology program to facilitate the development of entrepreneurial skills: *Business Model Generation* (Osterwalder and Pigneur, 2010), *The Lean Startup* (Ries, 2011) and *Creating Robust Business Models* (Haaker, 2012). These tools are embedded in project-based learning modules using active learning techniques to optimize the learning effects (Bonwell and Eison, 1991).

Business Model Generation by Alexander Osterwalder and Yves Pigneur is a popular tool in both the professional field and entrepreneurship education (Rutten et al., 2015). The key element in this method is the Business Model Canvas: a shared language for describing, visualizing, assessing and changing business models. In addition, the tool provides examples of recurring types of business models, called patterns, and design techniques for business modeling: customer insights, ideation, visual thinking, prototyping, storytelling and scenarios (Osterwalder and Pigneur, 2010).

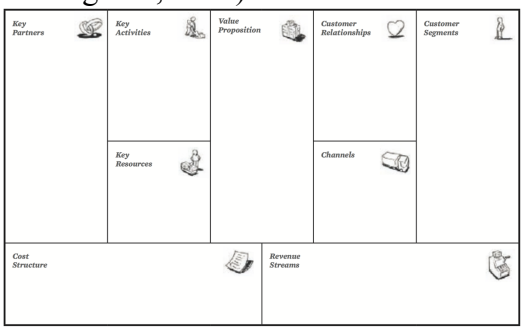

Figure 1. The Business Model Canvas (Osterwalder and Pigneur, 2010, p. 44).

The Lean Startup by Eric Ries is a tool to shorten product development cycles by applying an iterative design loop called "Build-Measure-Learn." Building a minimum viable product for real world experimentation avoids the need for large investments and expensive failures. Responses from early users can be measured using actionable metrics that accurately reflect the key drivers of the business. Validated learning informs the entrepreneur when to pivot or persevere, to take the next iteration into a new direction or continue down the chosen path (Ries, 2011).

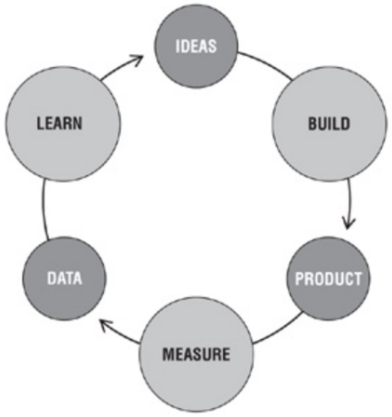

Figure 2. The Build-Measure-Learn loop (Ries, 2011, p. 75).

In addition to the existing tools already mentioned, a simplified tool was developed in the research project "The Future Now." Saxion University of Applied Sciences was one of the key partners in the project, which explored how media companies can anticipate fast changing (cross)media technologies and social trends in order to secure their own business impact in the future (Van Vliet and Keuning, 2012). The resulting tool, *Creating Robust Business Models*, allows companies to create robust business models: business models that are viable in the long run. It uses the "STOF" business model language, which describes a business model using the four domains of service, technology, organization, and finance (Bouwman, De Vos, and Haaker,

2008). The key elements of *Creating Robust Business Models* are stress-testing and road-mapping. Stress-testing systematically analyzes the quality of a business model through indicators from future scenarios or success factors. The resulting heat signature is a visual overview of the strength or weakness of each business model element. Road-mapping provides a visual overview of the intermediate steps and critical choices needed to implement a desired business model (Haaker, 2012).

Figure 3. Example of a stress test heat signature (Haaker, 2012, p. 43).

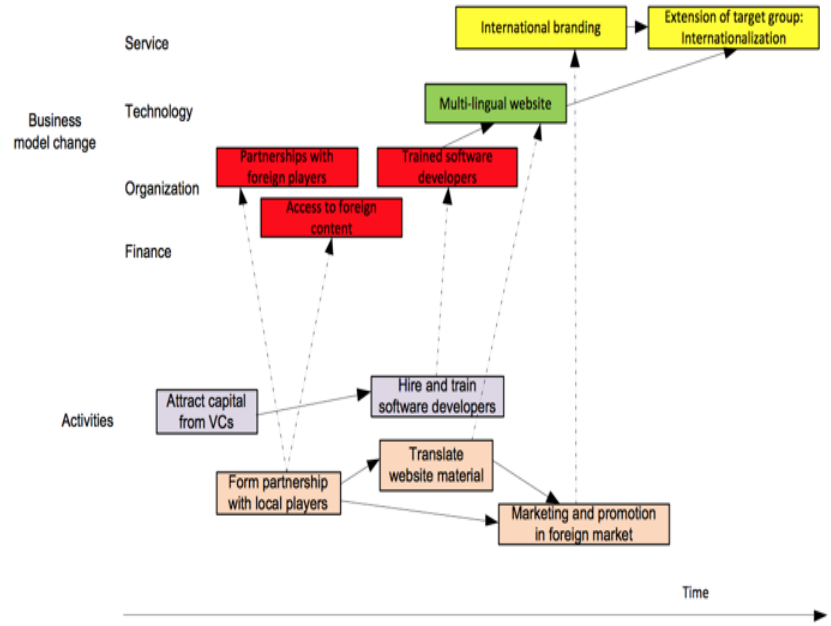

Figure 4. Example of a roadmap (Haaker, 2012, p. 71).

The skills context

Several studies around the world (Daniel and Daniel, 2014; Nathan, 2011; Wood and Duffy, 2008) have explored which entrepreneurial characteristics and skills are needed to excel in the creative economy and should therefore be developed in art and design related education. In a recently conducted study in The Netherlands, for example, data was collected through education professionals from several Dutch educational institutions. A list containing seventeen suggested entrepreneurial characteristics and skills was presented to the participants, after which they were asked to assess the importance of each item on a scale of one to five (five being an essential characteristic or skill). An overview of the results can be viewed in figure 5 from Rutten et al. (2015, p. 68).

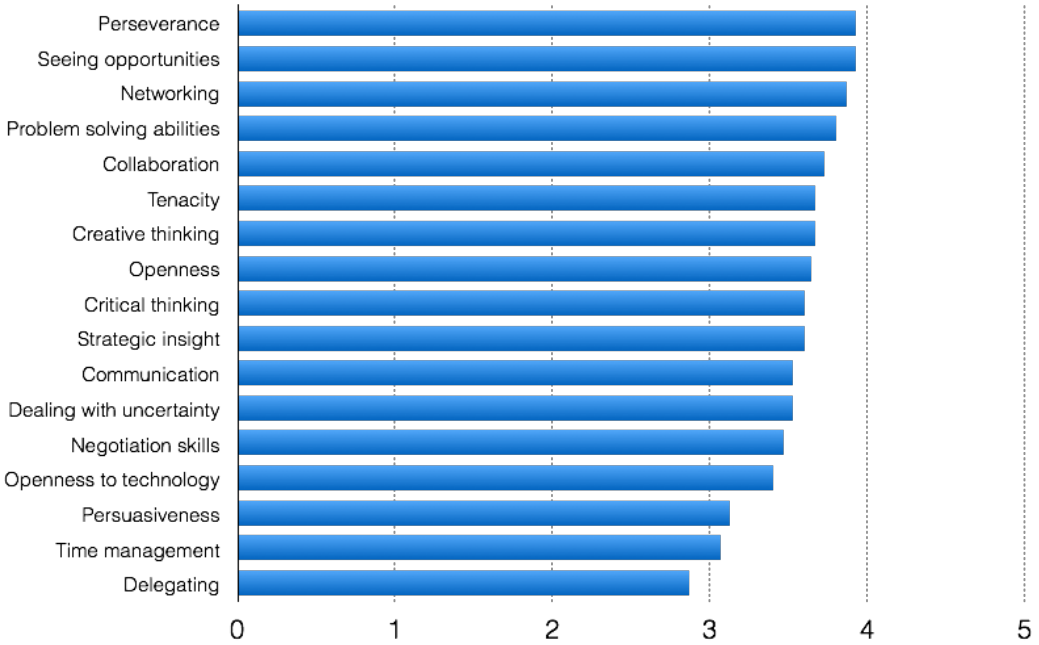

Figure 5. Importance of entrepreneurial characteristics and skills in art and design related education.

It is important to note that the ranking of the items presented in figure 5 is based on the views of education professionals who are not all directly involved in actual teaching and who are connected to various art and design related courses with different views on the role of entrepreneurship in art and design related education. In addition, the participating education professionals were asked to assess a preselected list containing seventeen items, leaving no room for possible alternative characteristics and skills not presented on the list.

Qualitative Exploration

Objective

The goal of this research is to perform an initial qualitative exploration of to what extent the business modeling tools that are currently used in the Art & Technology program facilitate

the development of essential entrepreneurial skills for Art & Technology students. Since the ranking of the characteristics and skills presented in Figure 5 shows a cross-section of different views in Dutch art and design related education, a new set of specific essential entrepreneurial skills for the Art & Technology program will be defined.

The next section describes the methods used to determine this new set of skills. Subsequently the three business modeling tools described in the previous sections are evaluated based on their possible contribution to the development of these skills.

Methods

To determine a specific set of essential entrepreneurial skills for Art & Technology students, qualitative interviews were conducted in March, 2015 with four education professionals connected to the course Creative Media & Game Technologies. All of the participants are experienced in working with a wide range of business modeling tools commonly used in the professional field. Their involvement in creative entrepreneurship education ranges from lecturing on business modeling to coaching students in starting their own businesses. The participants were asked to describe their experiences with entrepreneurial students and share their views on business modeling tools. In addition, the participants were asked to define typical characteristics of Art & Technology students, based on their teaching experiences with these students. All qualitative interviews were transcribed using audio recordings. Matching topics were labeled and categorized. Only topics that were unanimously mentioned by all the participants were marked as an essential entrepreneurial skill for Art & Technology students.

A focus group session with Art & Technology students was organized in April, 2015 to confirm the set of essential skills identified by the instructors. Participants were required to be recently graduated or in the final stage of the program to be able to evaluate the relevance of each skill based on their own experience. In addition, participants with an above average interest or involvement in entrepreneurship were recruited. A call to participate using social media groups connected to the program resulted in eight participants, ranging from students specializing in entrepreneurship to recent graduates running their own businesses. During the session, each essential skill was presented and explained to the group, after which the skill was plenary discussed. First the participants were asked if they recognized the necessity of the specific skill and if they agreed with the definition. Subsequently the participants were asked to give examples from personal experience regarding the use or lack of the specific skill. The qualitative focus group session lasted one hour and was transcribed using an audio recording. Skills that were unanimously recognized as essential were marked as confirmed.

Results

Six specific entrepreneurial skills for Art & Technology students were unanimously mentioned in the interviews and confirmed in the focus group session: developing personal identity, determining professional value, diverging and converging, communicating visually, exchanging experiences, and validating ideas. Following are definitions for each, based on the combined interpretations of the interviewed education professionals.

Developing personal identity. It is important for students to have an understanding of their personal identity and a clear vision of their area of expertise. By making projects personal, students are more motivated and better able to deal with setbacks. In addition, insight into

personal qualities and weaknesses helps students to define direction in the fast changing professional creative field. The following statement from one of participating education professionals illustrates the importance of this skill: "When students know themselves well, they can develop a better vision with respect to their business" (personal communication, March 23, 2015).

Determining professional value. It is important for students to have knowledge of the professional creative field. Due to a lack of experience or a predominant internal drive to design, some students lack proper insight into their market value and position. This causes difficulties when setting up their business model and developing future scenarios for their business. The following statement from one of participating education professionals illustrates the importance of this skill: "Students do not so much have a wrong picture of running a business, but they simply have little insight in these matters" (personal communication, March 23, 2015).

Diverging and converging. It is important for students to diverge and converge at the appropriate time. Some students seem afraid of making decisions during projects, causing them to diverge indefinitely and explore alternative options without making decisions. Other students tend to be too passionate about their project, causing them to explore no alternative options at all. The following statement from one of participating education professionals illustrates the importance of this skill: "Rather than diverge and then converge, some students just keep on diverging and fail to converge when needed" (personal communication, March 9, 2015).

Communicating visually. It is important for students to have a clear and up-to-date overview of their concept and the underlying business model. A visual overview creates a common language and simplifies communication between the student and teachers, peers, end-users or other stakeholders in the project. The following statement from one of participating education professionals illustrates the importance of this skill: "The market demands a more visual approach to information instead of a written business model" (personal communication, March 9, 2015).

Exchanging experiences. It is important for students to cooperate in groups with other entrepreneurial students and share their ideas. Although each student has different personal aspirations, they all share the common goal of running a successful business. By exchanging ideas and experiences, either positive or negative, with like-minded peers, students gain valuable insights. The following statement from one of participating education professionals illustrates the importance of this skill: "Competence is developed by talking to other successful entrepreneurs" (personal communication, March 24, 2015).

Validating ideas. It is important for students to validate their ideas as soon as possible and continue validating each iterative step throughout the entire design process. Students need to "get out of the building" (Blank and Dorf, 2012) to introduce their concepts to future end-users and gain valuable insights, even when this results in exposing themselves to negative feedback from these users. The following statement from one of participating education professionals illustrates the importance of this skill: "Students experience a barrier when it comes to testing their first ideas, because they want to make the first test a success. However, especially the mistakes provide valuable insights" (personal communication, March 24, 2015).

Analysis

The set of skills defined above can be linked to key elements of the Art & Technology program (Heeroma et al., 2014). All skills can be applied in project-based learning modules using active learning techniques. Development of the skill validating ideas stimulates a user-

centered approach and an iterative process. Finally, development of the skills communicating visually and exchanging experiences enables students to work in multi-disciplinary teams.

The business modeling tools *Business Model Generation*, *The Lean Startup* and *Creating Robust Business Models* were evaluated based on their possible contribution to the development of the resulting set of skills. Sections related to one or more skills were marked in the official documentation of the business modeling tools. Subsequently the marked sections were assessed on their potential contribution to mastering the skill through application and reflection. An overview of the evaluation can be viewed in table one, followed by a more detailed description for each skill.

	Business Model Generation	*The Lean Startup*	*Creating Robust Business Models*
Developing personal identity	-	-	-
Determining professional value	-	-	-
Diverging and converging	-	Forcing specific direction	Exploring multiple directions
Communicating visually	Clear communication	-	Clear communication
Exchanging experiences	-	-	-
Validating ideas	Controlled environment	Real world	Controlled environment

Table 1. Evaluation of the possible contributions of the business modeling tools to the development of entrepreneurial skills.

Based on the key elements described in the introduction, the business modeling tools can contribute to the development of three of the resulting skills: diverging and converging, communicating visually and validating ideas.

- *The Lean Startup* facilitates enforcement of a specific direction by building a minimum viable product as soon as possible and assessing when to pivot or persevere based on validated learning. On the other hand, *Creating Robust Business Models* facilitates exploring multiple directions by developing multiple future scenarios.
- *Business Model Generation* facilitates clear communication by visualizing an overview of the entire business model. In addition, *Creating Robust Business Models* facilitates clear communication by visualizing overviews of the business model stress test and roadmap.
- *Business Model Generation* facilitates testing in a controlled environment through various design techniques for business modeling. In addition, *Creating Robust Business Models* facilitates testing in a controlled environment through stress testing and road-mapping. On the other hand, *Lean Startup* facilitates testing in the real world by launching a minimum viable product to end-users and making iterative improvements based on validated learning.

A possible contribution of the business modeling tools to the skills developing personal identity, determining professional value and exchanging experiences is less evident.

- Although the business modeling tools mention that a clear vision is a precondition to successful entrepreneurship, the development of such a vision or the connection to the personal identity of the entrepreneur is unclear.
- Although the business modeling tools provide various techniques to acquire knowledge for a specific entrepreneurial project, it is unclear how this specific knowledge can be translated to a more general understanding of the market value and position of the entrepreneur in the professional field.
- Although the business modeling tools stimulate discussion with team members and end-users, there is no clear mention of exchanging experiences with other entrepreneurs and sharing ideas.

Process skills and personal skills

The skills that can be facilitated by the business modeling tools (diverging and converging, communicating visually, and validating ideas) seem to be connected to the process of running a specific entrepreneurial project. The other skills (developing personal identity, determining professional value, and exchanging experiences) seem to be more connected to the personal development of the entrepreneur. Therefore the specific set of essential skills for Art & Technology students can be categorized into process skills and personal skills. Additional tools for entrepreneurship are needed to develop the personal skills. The importance of personal skills is underlined in the predominant view in Dutch art and design related education, which states that entrepreneurship is above all a matter of motivation, behavior and personal characteristics (Rutten et al., 2015).

In Dutch art and design related education there are two opposing views regarding the role of entrepreneurial skills: entrepreneurial skills being disconnected from the creative professional opposed to entrepreneurial skills being an essential part of the creative professional. When entrepreneurial skills are viewed as being disconnected from the creative professional, existing business modeling tools can be used to develop these skills. However, when entrepreneurship is viewed as an essential part of the creative professional, as is the case for the Art & Technology program, the core of the creative profession changes and additional tools for entrepreneurship are needed (Rutten et al., 2015).

Conclusion

The development of six specific entrepreneurial skills for Art & Technology students, resulting from an initial qualitative exploration, can only be partly facilitated by the three business modeling tools that are currently used in the Art & Technology program at Saxion University of Applied Sciences. The skills that can be facilitated (diverging and converging, communicating visually and validating ideas) are categorized as process skills and the other skills (developing personal identity, determining professional value and exchanging experiences) as personal skills. The resulting business modeling tool for the Art & Technology program should combine key elements from the described business modeling tools with additional tools to develop the personal skills. These new learning tools should also be embedded in project-based learning modules. In the current Art & Technology program, students are coached periodically on their professional progress and personal development. Further research is needed regarding the embedding of such coaching or other learning tools in entrepreneurial projects. In addition,

more interviews and focus group sessions with education professionals and students are needed to validate the preliminary results of this study.

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